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Spoilage Management Practices and Financial Performance of Small-Scale Greengrocers

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APPROVAL SHEET

In partial fulfillment of the requirements for the degree of Bachelor of Science in Business Administration, this thesis entitled **"Spoilage Management Practices and Financial Performance of Small-scale Greengrocers"** has been prepared and submitted by De Los Reyes, Jennifer, Aguilar, Julius, Dequilla, Khryzyl Bray E., Eusebio, Charizza J., Flores, Richman Z., Garcia, Larah Grace H., Guballa, Christian Andrei B., Layson, Carlo Agustine P., and Parreño, James Reniel D., who are hereby recommended for oral examination.

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To God, for His infinite blessings, be all the glory and honor.

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DEDICATION

We dedicate this research work to

Our beloved families—our parents, siblings, and significant others;

Small-scale greengrocers;

Our beloved Alma Mater, Carlos Hilado Memorial State University - Fortune Towne Campus;

And,

Above all,

To our Almighty God.

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ABSTRACT

This study examined spoilage management practices and financial performance among small-scale greengrocers using a quantitative, descriptive-correlational design. Eighty- nine greengrocers, 65 vegetable and 24 fruit vendors, were randomly sampled. Data were collected through a researcher-made questionnaire alongside an adopted standardized instrument. Descriptive statistics were presented using means and standard deviations, while inferential analyses employed Independent t-test, Mann–Whitney U test, Spearman's rank correlation, and Multiple linear regression. Results showed that spoilage management practices were generally great, with procurement and handling rated very great, transportation and storage rated great, but disposal practices were notably low. The overall financial performance was high, and similar high result was found in sales and cost, but profit obtained low result. The extent of spoilage management practices was found to be great across profile variables when categorized by nature of product, capitalization, and years of business operation. Similarly, the level of financial performance remained high across these same categories. Furthermore, inferential analysis revealed no statistically significant differences in spoilage management practices among small-scale greengrocers when grouped according to their business profile. Financial performance did not differ significantly when grouped by capitalization and years of business operation. However, a statistically significant difference in financial performance was observed based on the nature of the product. Furthermore, no significant relationship was found between spoilage management practices and financial performance. The regression analysis indicated that business profile variables did not significantly predict financial performance. Hence, spoilage management practices and business profile were found to have no significant effect on the financial performance of small-scale greengrocers.

Keywords: *Spoilage Management Practices, Financial Performance, Business Profile Variables, Small-Scale Greengrocers, and Bacolod City.*

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CHAPTER ONE
INTRODUCTION

➢ *Background of the Study*

One of the biggest problems plaguing the food industry is food spoilage, caused by microbial, chemical, and physical changes that make food unsafe to eat, altering its texture, appearance, and taste (Ray & Bhunia, 2013; Sperber & Doyle, 2009, as cited in Hemanth et al., 2024). Food spoilage significantly contributes to food loss and waste, as spoiled food typically cannot be reused or repurposed. This waste threatens food security and sustainability, as it refers to edible food discarded, occurring across retail and consumer levels, resulting in waste (Karanth et al., 2023). Heng and House (2021) noted in their study that fresh fruits and vegetables are highly perishable, increasing the likelihood of becoming inedible and discarded.

Fruits and vegetables, the most consumed food globally, contribute over 42% of food waste due to their high perishability (Parsafar et al., 2023). Food and Agriculture Organization (FAO) (2012, as cited in Ewing-Chow, 2020) reported that South and Southeast Asia experienced 51.5% of fruit and vegetable losses. Buhion et al. (2024) discovered in their study that the Pasig mega market in the Philippines generates around 100-200 kilograms of waste per day, primarily consisting of leafy vegetables and fruits. FAO reported that approximately 14% of food spoils before reaching retailers, resulting in an annual loss of $400 billion, underscoring the substantial economic benefits of reducing spoilage through improved management practices (Taichman, 2024).

According to the study of Lestari et al. (2024), poor demand forecasting and inefficient replenishment policies result in excess fruit and vegetable procurement, leading to food waste. To mitigate this, procurement strategies should focus on minimizing waste while maintaining consumer quality standards. Moreover, according to the study of Singh et al. (2025), maintaining clean transport vehicles is essential for preventing contamination, ensuring fresh produce safety, and minimizing spoilage to enhance food security. Sharma and Sharma (2024) highlighted in their study that food storage is essential for maintaining safety, quality, and freshness while preventing spoilage. In the study of Kaur et al. (2023), it is emphasized that proper handling methods, such as washing, sorting, and gentle handling systems, are crucial for minimizing damage and preserving the quality of fresh produce. Furthermore, efficient waste disposal management, including recycling, composting, and reusing, reduces costs and enhances financial efficiency while promoting sustainability (Carere, 2024).

Financial performance generally reflects a business' overall economic stability (Pagtolon-an, 2024). Various factors affect the financial performance of small businesses, typically assessed through metrics like sales, costs, and profitability (Buison et al., 2023). Studies have demonstrated that effective spoilage management practices can significantly influence the seller's financial performance (Bayogan et al., 2023; Herron et al., 2022). For instance, according to the study of Alegbeleye et al. (2022), market vendors slow down fruit and vegetable spoilage by washing and drying their products, helping to reduce financial losses. A study of Buhion et al. (2024) found that the reduction in the amount of fruit and vegetable waste, signifying an improvement in product quality and profitability. A research finding from Ratliff (2023) suggested that implementing food spoilage prevention strategies can help reduce waste, which is reflected in factors like profits, budgeting, and inventory management.

Prior research has primarily focused on general inventory management practices rather than specifically addressing spoilage management practices (Peraren et al., 2023). While a study of Kumar et al. (2022) analyzed food supply chain inefficiencies leading to spoilage, their study did not explore business-level strategies for mitigating spoilage and improving financial performance. Furthermore, most studies have been conducted in global contexts, with limited research addressing small-scale greengrocers in the Philippines and within the locality (Carere, 2024; Kaur et al., 2023; Lestari et al., 2024; Sharma & Sharma, 2024; Singh, 2025). This knowledge gap limits the ability of small-scale greengrocers to develop effective spoilage management practices that enhance financial performance.

This study is conducted to address the knowledge gap that limits the ability of small-scale greengrocers to develop effective spoilage management practices that enhance financial performance. This aims to help the small-scale greengrocers to determine the correlation and effectiveness of spoilage management practices and the relation to its financial performance. Ultimately, the researchers aim to develop evidence-based spoilage management recommendations to help aid in minimizing losses and enhancing financial performance of the small-scale greengrocers within the locality.

➢ *Statement of the Problem*

The objective of this study was to determine the spoilage management practices and financial performance of small-scale greengrocers.

Specifically, the study sought to answer the following questions:

- What is the extent of spoilage management practices of small-scale greengrocers in terms of:

✓ Procurement;

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- ✓ Transportation;
- ✓ Storage;
- ✓ Handling; and
- ✓ Disposal

When taken as a whole and when grouped according to their nature of product, capitalization, and years of business operation?

- What is the level of financial performance of small-scale greengrocers based on:

- ✓ Sales;
- ✓ Cost; and
- ✓ Profit

When taken as a whole and when grouped according to their nature of product, capitalization, and years of business operation?

- Is there a significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their business profiles?
- Is there a significant difference in the level of financial performance of small-scale greengrocers when grouped according to their business profiles?
- Is there a significant relationship between the extent of spoilage management practices and the level of financial performance of small-scale greengrocers?
- Do business profiles predict financial performance of small-scale greengrocers?
- What are the strategies that could be proposed?

➢ *Hypotheses*

Based on the specific objectives, the following hypotheses are advanced:

- There is no significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their business profiles.
- There is no significant difference in the level of financial performance of small-scale greengrocers when grouped according to their business profiles.
- There is no significant relationship between the extent of spoilage management practices and the level of financial performance of small-scale greengrocers.
- Business profiles do not predict financial performance of small-scale greengrocers.

➢ *Theoretical Framework*

This study theorized that effective spoilage management practices could lead to enhanced financial performance. To support this investigation, the Resource Based View (RBV) Theory by Barney (1991) and Supply Chain Management (SCM) Theory by Mentzer et al. (2001) will serve as the theoretical framework. A brief discussion of RBV and SCM Theory is provided below.

The Resource-Based View Theory (RBV), introduced by Barney (1991), posits that a firm's competitive advantage stems from its valuable, rare, inimitable, and non-substitutable (VRIN) resources. Consequently, businesses that effectively manage their resources can enhance operational efficiency and, therefore, financial performance. This theory, in addition, suggests that a firm's strategic decisions are influenced by its internal capabilities and resources, which significantly impact the processes it adopts and its process innovation strategies (Nava et al., 2023).

In the context of spoilage management practices, RBV helps explain how small-scale greengrocers leverage internal resources to minimize spoilage and, as a result, reduce financial losses. Spoilage management practices typically refer to the activities, including efficient procurement (Deepradit et al., 2025), transportation strategies (Al-Dairi et al., 2022), proper storage (Yenare et al., 2024), handling techniques (Kaur et al., 2023), and disposal management (Buhion et al., 2024), used to avoid spoilage of foods. Deepradit et al. (2025) emphasized in their study that procurement plays a vital role in planning, involving sourcing, quantity, and timing decisions. A study from Al-Dairi et al. (2022) states that effective transportation strategies can minimize produce damage.

Proper storage conditions are crucial for preserving food quality, as it enhances the storage of perishable foods (Yenare et al., 2024). Moreover, proper handling techniques are essential for reducing damage and maintaining the quality of fresh produce (Kaur et al., 2023). Additionally, Buhion et al. (2024) highlighted in their study that effective waste disposal management strategies, such as repurposing fruit and vegetable waste, not only lowers costs for vendors but also enhances sustainability by reducing environmental impact. Thus, Resource-Based View (RBV) Theory is relevant to spoilage management practices as it explains how small-scale greengrocers can leverage internal resources to minimize spoilage and reduce financial losses. Effective spoilage management practices, including efficient procurement, transportation strategies, proper storage, handling techniques, and disposal

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management, represent valuable resources. Utilizing these practices effectively allows greengrocers to gain a competitive advantage through enhanced product quality and reduced waste.

Consequently, in the context of financial performance, Resource-Based View Theory explains how small-scale greengrocers can minimize costs, maximize sales, and enhance profitability by strategically leveraging their available resources. Similarly, sales performance is influenced by marketing strategies, where targeted promotions can increase the sales of perishable goods such as mangoes, pineapples, and strawberries by up to threefold. (Kirci et al., 2022). Moreover, profitability is not solely determined by resource possession but by a firm's ability to deploy and utilize these resources efficiently. Even businesses with significant financial and operational resources must apply strategic decision-making to ensure optimal resource utilization, which ultimately drives higher financial performance (Mahoney & Pandain, 1992; Majumdar, 1998; Peteraf, 1993, as cited in Arbelo et al., 2020). This theoretical framework establishes that small-scale greengrocers who develop strong internal capabilities in cost management, sales optimization, and profit maximization are better equipped to reduce spoilage, enhance financial performance, and maintain a sustainable competitive advantage. Therefore, the Resource-Based View Theory (RBV) highlights that a business' financial success depends on managing unique resources like sales, costs, and profits to enhance their competitive advantage, and achieve sustainable financial performance.

The study is also anchored in the Supply Chain Management (SCM) Theory, which emphasizes the interconnectedness of all activities involved in the flow of goods and services, from raw materials to the final consumer (Mentzer et al., 2001). In the context of this Spoilage Management Practices, SCM theory provides a framework for understanding how the management of the greengrocers' supply chain, particularly in relation to procurement (John & Singh, 2025), transportation (Nath et al., 2018), storage (Karanth et al., 2023), handling (Kamboj et al., 2020), and disposal (Todd & Faour-Klingbeil, 2024), influences spoilage and ultimately affects their financial performance. Effective management of these elements can minimize losses due to spoilage, maintain product quality, and ensure timely delivery, all of which contribute to better financial outcomes.

Specifically, according to the study of John and Singh (2025), they have asserted that a well-structured procurement strategy is a critical factor in enhancing the efficiency and effectiveness of the agri-fresh produce supply chain. Transportation is essential in the postharvest chain, ensuring fresh produce reaches markets through road, rail, maritime, and air transport (Nath et al., 2018, as cited in Al-Dairi et al., 2022).

Moreover, maintaining cleanliness in storage areas, particularly those in direct contact with food throughout the supply chain, is crucial to preventing cross-contamination and reducing food loss (Karanth et al., 2023). Kamboj et al. (2020) stated in their study that creating a supportive physical and social environment can greatly enhance food hygiene practices by encouraging proper food handling behaviors.

Additionally, Todd and Faour-Klingbeil (2024) suggested in their study that food businesses like retailers and foodservice providers can work with local governments to find alternative uses for food waste instead of sending it to landfills. Therefore, effective management of procurement, transportation, handling, storage, and disposal are critical components of the supply chain for small-scale greengrocers, aligning with Supply Chain Management Theory by directly influencing spoilage and providing a pathway to enhanced financial performance.

Beyond its impact on spoilage management, SCM also plays a crucial role in financial performance. The level of a company's ability to use assets to generate sales and its supply chain management procedures can directly affect the company's financial performance (Nahar et al., 2020). Kirci et al. (2022) stated in their study that effective cost management in supply chain operations depends on factors such as inventory control, promotional activities, delivery methods, and supplier coordination. Similarly, the findings in the study of Wahdan and Emam (2017) further indicated that SCM significantly impacts financial performance by enhancing productivity, decreasing costs, and improving profitability. This suggests that businesses with well-structured supply chain processes are better positioned to achieve higher financial performance while minimizing spoilage-related losses.

Ultimately, the Resource-Based View (RBV) Theory and Supply Chain Management (SCM) Theory provide a strong foundation for understanding the relationship between spoilage management practices and financial performance among small-scale greengrocers. Together, these theories illustrate that effective resource utilization and supply chain optimization are essential for improving cost management, sales performance, and overall financial sustainability in the fresh produce industry.

- *Conceptual Framework*

This study aimed to determine the extent of spoilage management practices and the level of financial performance of small-scale greengrocers. The results on the extent of spoilage management practices in terms of procurement, transportation, storage, handling, and disposal vary depending on the business profiles in terms of nature of product, capitalization, and years of business operation. The result on the level of financial performance in terms of sales, cost, and profit vary depending on the business profiles in terms of nature of product, capitalization, and years of business operation.

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Furthermore, the extent of spoilage management practices may have no relationship with the level of financial performance of small-scale greengrocers. Additionally, the study determines whether business profiles serve as predictors of financial performance.

Based on the findings, proposed strategies in an Information, Education, and Communication (IEC) material are formulated and recommended to the small-scale greengrocers.

Figure 1 showed the relationship between and among the variables covered in this study.

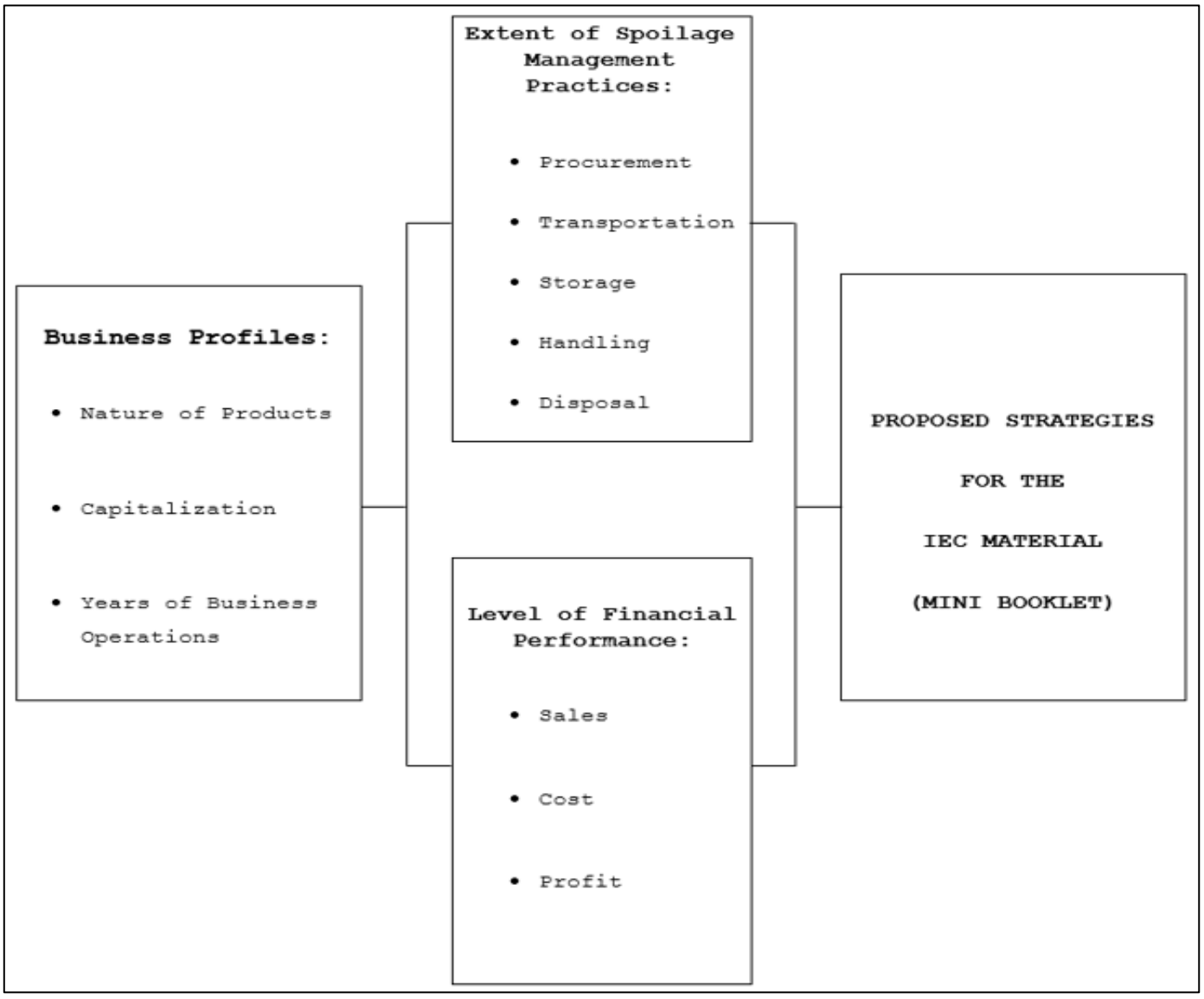

Fig 1 Schematic Diagram of the Conceptual Framework

➢ *Significance of the Study*

The findings of the study will be beneficial to the following:

- *Small-scale Greengrocers*

This study will provide small-scale greengrocers with actionable insights into cost-effective spoilage management practices tailored to their market conditions, aiming to reduce financial losses, improve performance, and offer practical solutions to optimize operations and enhance sustainability.

- *Prospective Entrepreneurs and Investors*

Aspiring entrepreneurs will benefit from this study by gaining insights into food spoilage reduction strategies. For investors, they can use the findings to make informed decisions when funding sustainable businesses in the fresh produce sector.

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- *Suppliers*

Suppliers will gain insights into how spoilage impacts small-scale greengrocers, allowing them to refine inventory management and delivery strategies. This will help improve supply chain efficiency, reduce waste, and strengthen business relationships.

- *LGU Officials*

This study will assist local government officials in formulating policies that

support small-scale greengrocers in reducing spoilage and improving financial performance. It will also provide insights for implementing programs that enhance food sustainability and waste management.

- *Market Administrators*

This study will provide market administrators with valuable data to create evidence-based policies that enhance market conditions for small-scale greengrocers. It will offer insights into developing targeted programs, subsidies, and regulations to improve storage facilities, reduce food spoilage, and promote a more sustainable market ecosystem.

- *Academicians*

This research could be of benefit to the teachers and students of different universities and schools through providing in depth knowledge and supplementary information in line with their interests and studies.

- *Researchers*

This pertains to BSBA Major in Financial Management students who conducted this study. Throughout the research process, they will gain valuable knowledge, enhance their understanding, and achieve a sense of self-fulfillment. Furthermore, the findings of this study will serve as a basis for formulating a proposed course of action.

- *Future Researchers*

The results of this study will contribute to existing literature by providing a basis and reference for future studies related to spoilage management practices and the financial performance.

➢ *Scope and Limitation of the Study*

This study focused on spoilage management practices and financial performance of small-scale greengrocers in one of the major public markets in Bacolod City.

The research examined procurement, transportation, storage, handling, and disposal as key indicators of spoilage management practices and evaluated financial performance in terms of sales, cost, and profit. Additionally, the study considered the business profiles of participants, including nature of product, capitalization, and years of business operation.

The participants, who were selected through stratified random sampling, were the small-scale greengrocers in one of the major public markets in Bacolod City, Negros Occidental. Eligible participants had to meet the following criteria: (1) at least one year of business operation, (2) fruit or vegetable stall owner, and (3) operating in one of the major public markets in Bacolod City.

The actual study was conducted between February to June 2025. However, the findings were subject to certain limitations, including a limited sample size, potential data accuracy concerns, and the study's focus on a specific market, which may limit its relevance to other locations or business types.

This research primarily aimed to offer recommendations and draw conclusions upon completion. Nevertheless, it was essential to acknowledge that the study was limited solely to small-scale greengrocers, and the results might not have been applicable to large retailers or other sectors.

➢ *Definition of Terms*

The following were defined conceptually and operationally for deeper understanding of this study:

- *Business Profiles*

Conceptually, it is the information consisting of the characteristics of small firms owned by entrepreneurs (Makrygianni & Kontogianni, 2021).

Operationally, in this study it is the nature of product, capitalization, and years of business operation of the small-scale greengrocers.

✓ *Capitalization*

Conceptually, it is the total of owned and borrowed capital typically formed through human investment (Kuzmin et al., 2020).

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Operationally, it is categorized into ₱10,000 and below and above ₱10,000.

✓ *Years of Business Operation*

Conceptually, it is the duration of business operations (Khamis et al., 2018).

Operationally, it is categorized into 16 years and below and above 16 years.

✓ *Nature of Product*

Conceptually, it is related to the characteristics of business description under the type of commodity or commodity business category, describing the products sold by a business (Rasimikayati et al., 2023).

Operationally, it refers to the kind of product, fruits or vegetables, that the small-scale greengrocer is selling.

- *Financial Performance*

Conceptually, it is the major point of interest for the entity's internal and external environment (Sukenti, 2022).

Operationally, this includes the sales, cost, and profit of the greengrocers in operating their business.

✓ *Cost*

Conceptually, these are the incurred costs in processing the raw materials and turning them into a finished output (Sari & Siswanto, 2023).

Operationally, this measures the financial performance in terms costs and expenses incurred by the greengrocers during business activities including inventory and supplies, labor cost, electricity and water expenses, transportation and delivery cost, and rent expense.

✓ *Profit*

Conceptually, it is the income earned by the company after the deduction of all expenses (Moise, 2023).

Operationally, this measures the level of profitability of the greengrocers in terms of gross profit and net profit after deducting costs and expenses from sales.

✓ *Sales*

Conceptually, it is the income of a business from the selling of its goods and services (Al Hayek, 2018, as cited in Moise, 2023)

Operationally, it measures the level of financial performance of the greengrocers in terms of gross sales and net sales.

- *Small-Scale Greengrocers*

Conceptually, these are small entrepreneurs who saw opportunities and engaged in the selling of vegetables (Banik, 2017; Arisena, 2021).

Operationally, this refers to the greengrocers which are selling fruits and vegetables in one of the major public markets in Bacolod City.

- *Spoilage Management Practices*

Conceptually, it is the process of food being unfit for consumption and the strategies employed to achieve better results (Sahu & Bala, 2017; Brito & Sauan, 2016).

Operationally, these refer to the techniques, which includes handling, storage, and transportation, of the small-scale greengrocers in one of the major public markets in Bacolod City in ensuring that products are preserved for a longer time before spoiling.

✓ *Disposal*

Conceptually, it refers to the process of discarding or eliminating unwanted materials, substances, or waste products (Brunner & Rechberger, 2015).

Operationally, this refers to the practices greengrocers use to discard spoiled produce, ensuring cleanliness, reducing contamination risks, and generating profit by repurposing or selling items at a discount.

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✓ *Handling*

Conceptually, these are practices of people that involve hygienic practices and even environmental sanitation (MOH, 2012, Siow & Norrakiah, 2011, as cited in Woh et al., 2016).

Operationally, this is how the greengrocers handle their products in terms of sanitation and hygiene.

✓ *Procurement*

Conceptually, it is the process of acquiring products or services. It begins with identifying an organization's needs, followed by selecting, negotiating, and contracting suppliers to acquire the required goods or services (Li et al., 2018).

Operationally, it involves the understanding of the greengrocers regarding the order quantity, order cost, and time they consider in ordering or replenishing their perishable goods.

✓ *Storage*

Conceptually, it is the practice of keeping foods in a designated space for future consumption (Afriyie et al., 2022).

Operationally, this refers to how the greengrocers store their products.

✓ *Transportation*

Conceptually, it is the movement of people or goods from one place to another (Uganda Bureau of Statistics, 2017).

Operationally, these are the practices of greengrocers to avoid damages of their product during the trip.

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CHAPTER TWO
REVIEW OF RELATED LITERATURE

This chapter discusses the related concepts and studies about Spoilage Management Practices and Financial Performance of Small-scale Greengrocers from foreign and local sources.

➢ *Spoilage Management Practices*

Food spoilage is a major issue in the food industry, which can be termed as the process of food deterioration to a condition that is unfit for human consumption due to microbial, chemical, and physical changes, leading to undesirable changes in texture, appearance, and sensory qualities (Ray & Bhunia, 2013; Sperber & Doyle, 2009, as cited in Hemanth et. al, 2024). The interaction among these factors frequently exacerbates spoilage, resulting in a compromise of food safety and quality (Damotharan et al., 2024). Food spoilage occurs due to biological and environmental factors, with microbial contamination during production degrading food quality and safety, contributing to spoilage, which eventually leads to waste (Mafe et al., 2024). Microbial spoilage is a major cause of food loss and waste, as spoiled food often cannot be reused or repurposed. This threatens food security and sustainability by increasing discarded edible food (Karanth et al., 2023). Food loss and waste are not only a concern for economic and environmental reasons, but they also present a high risk of an outbreak due to contaminated food (Pedro et al., 2023).

Food waste reduction makes economic sense at the small scale, by lowering food bills and at large scale by reducing disposal costs for restaurants, processors, and farmers (Buhion et al., 2024). Therefore, spoilage management practices, which contribute to managing food waste, are crucial for economic development and sustainability. This interdisciplinary nature of efforts to enhance food sustainability, which integrates aspects of science, engineering, and culture, underscores their importance in addressing global challenges such as food security, waste reduction, and environmental sustainability (Mafe et al., 2024). A study by Buhion et al. (2024) found that limiting food degradation due to spoilage is also critical to lessen the negative economic impact.

Spoilage Management Practices (SMP) refers to spoilage, generally in foods, defined as the process causing them to be unsuitable for consumption (Sahu & Bala, 2017) and management practices defined as the strategies that businesses use for great results (Brito & Sauan, 2016). In view of this, spoilage management practices typically refer to the practices, tactics, and strategies used to avoid spoilage of foods. A study by Kaur et al. (2023) showed that proper post-harvest handling, storage, and transportation are essential in minimizing losses of perishable crops caused by spoilage, pests, or poor inventory conditions.

Furthermore, organized procurement (John & Singh, 2025), transportation strategies (Singh et al., 2025), proper food storage (Sharma & Sharma, 2024), handling techniques (Kaur et al., 2023), and disposal management (Parsafar et al., 2023) are crucial management practices used to prevent or reduce spoilage.

Various studies (John & Singh, 2025; Kaur et al., 2023; Parsafar et al., 2023; Sharma & Sharma, 2024; Singh et al., 2025) have demonstrated that effective spoilage management practices affect food safety, quality, and spoilage reduction. According to the study of John and Singh (2025), an organized procurement strategy is essential for improving the efficiency and effectiveness of the agri-fresh produce supply chain. Singh et al. (2025) emphasized in their study that keeping transport vehicles clean and sanitary is vital to preventing contamination and preserving product safety. Efficient transportation strategies are crucial in reducing spoilage and strengthening food security.

According to the study of Sharma and Sharma (2024), the main purpose of food storage is to preserve its safety and quality. Proper storage helps maintain freshness while preventing spoilage caused by microbes, chemicals, pests, and other contaminants. A study by Kaur et al. (2023) highlighted that effective handling techniques, including washing and sorting, are essential for reducing damage and maintaining the quality of fresh produce. Advanced techniques, such as gentle handling systems, further help preserve product integrity. Parsafar et al. (2023) highlighted in their research the need for effective food waste disposal management to reduce the economic and environmental consequences of fruit and vegetable waste.

Maintaining an effective and efficient way of practicing spoilage management leads to a variety of advantages. Sharma and Sharma (2024) stated in their study that it applies appropriate physical and chemical treatments to perishable, semi-permeable, and non-perishable foods, which helps prevent spoilage and waste while preserving their nutrients, quality, and quantity. Karanth et al. (2023) emphasized in their study that minimizing food waste during postharvest to retail-level handling, processing, and consumer consumption is essential for enhancing and sustaining sustainability. Furthermore, from a business perspective, decreasing food product waste indicates enhanced product quality and increased profitability (Buhion et al., 2024).

- *Procurement*

Lestari et al. (2024) stated in their study that food waste is common in perishable items like fruits and vegetables, often due to inaccurate demand forecasting, leading to spoilage and landfill disposal. A study of Deepradit et al. (2025) highlighted procurement as a key aspect of planning, involving decisions on sourcing, quantity, and timing. The make-or-buy decision, influenced by supplier competition, helps reduce costs and improve returns (Deepradit et al., 2025). John and Singh (2025) asserted in their study that a

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well-structured procurement strategy is a critical factor in enhancing the efficiency and effectiveness of the agri-fresh produce supply chain. Effective procurement planning is crucial for managing operational expenses and enhancing cost efficiency (John & Singh, 2025).

Ineffective procurement strategies result in quality inconsistencies due to sourcing from multiple regions. Collaboration among supply chain participants is essential to ensure fair pricing, as bulk suppliers often receive better rates than smaller producers (John & Singh, 2025). Gardas et al. (2018, as cited in John & Singh, 2025) highlighted in their study that the procurement of certain fresh produce is influenced by seasonality, leading to price fluctuations.

John and Singh (2025) stated in their study that poor procurement contracts hinder the efficiency of the agri-fresh produce supply chain, leading to inconsistencies in product quality and freshness. Waqas et al. (2022) emphasized in their study that the lack of a standardized procurement contract disrupts coordination among supply chain members, resulting in inefficiencies such as delays in order placement and fulfillment. Therefore, inefficient procurement increases costs, delays deliveries, and compromises quality, leading to customer dissatisfaction and market loss. Poor supplier selection further disrupts performance, hindering production and order fulfillment (Jama & Mohamud, 2024).

Effective procurement includes having consistent partnership with reliable suppliers (Jama & Mohamud, 2024), implementing demand forecasting (Lestari et al., 2024), and practicing optimal and precise estimation (Zhang et al., 2022). Jama and Mohamud (2024) emphasized in their study that partnering with reliable suppliers improves product quality, enhances reputation, and increases customer satisfaction. Procurement encompasses sourcing goods, including supplier selection, contract management, and negotiation.

Effective procurement strategies enhance cost efficiency, product quality, delivery reliability, supplier relations, and innovation (Cao & Wang, 2022; Mohamud et al., 2023). Lestari et al. (2024) highlighted in their study that inaccurate demand forecasting and inefficient replenishment policies lead to excess vegetable procurement, contributing to food waste. To address this, procurement strategies should prioritize waste reduction while meeting consumer quality expectations. Zhang et al. (2022) found in their study that overestimating retailers order excess stock, leading to high disposal costs, while over-precise retailers understock, incurring shortages and unmet customer demand. Consequently, a significant share of customer demand remains unfulfilled until after the sales season (Zhang et al., 2022).

Procurement encompasses key stages, including needs assessment, sourcing, market research, supplier selection, contracting, product or service delivery, and supplier performance evaluation (Schütz et al., 2019; Mothupi et al., 2022). Jama and Mohamud (2024) emphasized in their study that effective procurement planning is essential for operational efficiency and resource management. Establishing a structured framework ensures smooth processes and reliable supplier sourcing, enabling businesses to enhance performance and maintain a competitive advantage (Jama & Mohamud, 2024). The findings in the study of Jama and Mohamud, 2024 stated that effective procurement ensures high-quality goods, strengthens supplier relationships, and enhances competitiveness. Conversely, poor procurement practices hinder overall performance, with many businesses struggling to optimize procurement processes (Jama & Mohamud, 2024; Mothupi et al., 2022; Schütz et al., 2019).

- *Transportation*

Transportation serves as a critical link in the postharvest chain, encompassing distribution processes. The transportation of fresh produce from production centers to retail markets is facilitated through various modes, including road, rail, maritime, and air transport (Nath et al., 2018, as cited in Al-Dairi et al., 2022).

However, transportation is often accompanied by challenges that can compromise the quality of fresh produce within the distribution network (Al-Dairi et al., 2022). In addition, transportation disruptions are predominantly caused by congestion, mechanical failures, inclement weather, and insufficient resources and infrastructure. These factors cumulatively exacerbate logistical difficulties, hindering the efficiency of transportation systems (Stuart, 2010, as cited in Singh et al., 2025).

Inadequate transport infrastructure can lead to physical damage of food products such as bruising and other mechanical injuries (Al-Dairi et al., 2022). Typically, mechanical damage incurred by fresh produce during transportation poses a major economic issue, resulting in considerable financial losses (Idah et al., 2012, as cited in Al-Dairi et al., 2022).

According to the study of Singh et al. (2025), maintaining the cleanliness and sanitation of vehicles used for transporting goods is crucial in preventing contamination and ensuring integrity and safety of the products being transported. Transportation via substandard road infrastructure is a major factor in food loss in developing countries. The propensity for accidents and mechanical damage due to poor road conditions results in spoilage, further compounded by seasonal challenges such as landslides and dust. Consequently, optimizing transportation practices is essential as a key strategy for mitigating spoilage and enhancing food security in these regions. When transportation times and distances extend beyond the ripening period, the shelf life of perishable products is effectively diminished. As a result, this limits marketing opportunities and heightens the probability of customer rejection of delivered food items (Singh et al., 2025).

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Research findings of Al-Dairi et al. (2022) and Singh et al. (2025) indicated that the presence of adequate field facilities, road infrastructure, and loading and unloading facilities can significantly reduce food loss during transportation. Further, improved loading facilities and transportation setups can contribute to lowering food loss levels.

Moreover, reducing food waste necessitates efficient transportation from warehouses to retail locations, which is facilitated by timely operations and precise demand forecasting (Singh et al., 2025). The findings in the study of Al-Dairi et al. (2022) suggested that although mechanical damage during transportation is difficult to avoid, employing good management practices—such as improving refrigeration systems, using suitable packaging, and incorporating appropriate cushioning materials—can help minimize damage to fresh produce during transit.

- *Storage*

Sharma and Sharma (2024) discussed in their study that proper food storage extends shelf life, which primarily depends on factors like the type of food, packaging, and storage conditions, including humidity and temperature. In the same study of Sharma & Sharma (2024), they claimed that the primary goal of food storage is to ensure food remains safe and of high quality. It is essential to maintain its freshness for as long as possible while protecting it from microbes, chemicals, insects, rodents, and other contaminants to prevent spoilage. According to the research of Rudra et al. (2022), enhancing storage conditions and implementing technologies to combat foodborne pathogens will contribute to improved food safety. Additionally, antimicrobial storage methods are crucial for minimizing the risk of pathogen contamination while enhancing food quality and extending its shelf life.

Marshall (2021) defined store in their study as providing, supplying, or stocking something, as well as preserving it for future use or gathering and keeping it in reserve. Storing food can refer to both accumulating supplies and preserving them in a designated, suitable storage area for future consumption (Marshall, 2021). Furthermore, Food storage refers to various methods of preserving food to extend its shelf life while preventing physical, chemical, or other alterations (Sharma & Sharma, 2024).

According to the study of Sharma and Sharma (2024), if harvested fruits or vegetables are not stored or handled properly, they will spoil immediately. Therefore, proper storage conditions are crucial for preserving food quality, as it enhances the storage of perishable foods (Yenare et al., 2024). Moreover, maintaining cleanliness in all storage areas, especially those in direct contact with food throughout the supply chain, is essential. Unclean surfaces and spaces can lead to cross-contamination, causing significant food loss (Karanth et al., 2023).

Research findings of Tomaszewska et al. (2022) indicated that inadequate storage conditions lead to increased microbial spoilage, suggesting that adherence to recommended storage practices can significantly reduce food waste. Sharma and Sharma (2024) emphasized in their research that understanding food perishability and implementing appropriate storage methods are vital in spoilage management. Hence, proper storage practices, including temperature control and refrigeration (Yenare et al., 2024), packaging (Karanth et al., 2023), and inventory management (Nikolicic et al., 2021), contributes to spoilage reduction. Advances in cold storage technology, such as smart refrigeration systems and energy-efficient designs, help improve the storage and distribution of perishable foods (Yenare et al., 2024). According to the study of Karanth et al. (2023), food packaging serves as the first line of defense, shielding food from physical damage, chemical exposure, and microbial contamination. Nikolicic et al. (2021) demonstrated in their research that coordinated inventory management can significantly improve the sustainability of the food supply chain by reducing spoilage.

- *Handling*

Careful and proper handling practices, such as washing and sorting, plays a significant role to minimize damage and preserve the quality of fresh produce. Innovations, such as gentle handling systems, help maintain the integrity of the product (Kaur et al., 2023). However, inadequate food handling practices are a major source of food contamination (Commissions Codex Alimentarius, 2003, as cited in Putri & Susanna, 2021). According to the study of Karanth et al. (2023), human handling remains a primary source of contamination in food processing facilities. The handling practices employed by vendors, such as display techniques, transportation methods, storage conditions, and the use of non-potable water for sprinkling, pose a substantial risk of contaminating fruits and vegetables. This contamination can lead to the transmission of pathogenic infections, thereby contributing to the incidence of foodborne diseases as a result of inadequate postharvest handling by vendors (Boakye et al., 2023). Additionally, unclean surfaces and environments can significantly contribute to cross-contamination, leading to substantial food losses (Karanth et al., 2023).

Sperber (2009, as cited in Karanth et al., 2023) stated in their research the key factors contributing to this issue include the use of unclean hands or gloves, human physiological activities such as talking, coughing, sneezing, movement between different areas within the facility with varying microbial control measures, and inadequate cleaning of food-handling utensils and equipment. These handling-related factors are significant contributors to microbial contamination, ultimately leading to food loss. Putri and Susanna (2021) emphasized in their study that food contamination can often be attributed to inadequate handling practices, therefore, to mitigate this risk, food handlers must have thorough knowledge of safe handling procedures, maintain a positive attitude towards food safety, and adhere to proper practices at all times.

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Furthermore, access to clean water is vital for several critical activities, including handwashing, food rinsing, facility cleaning, and equipment sanitization, all of which are essential for maintaining safe food handling practices (Putri & Susanna, 2021). Maintaining cleanliness in storage areas, especially those in direct contact with food throughout the food supply chain, is crucial (Karanth et al., 2023).

The findings in the study of Putri and Susanna (2021, as cited in Mafe et al., 2024), indicated that maintaining good personal hygiene is crucial for food handlers to prevent contamination from skin, hair, and clothing. This involves practicing regular handwashing, keeping hair restrained, and wearing clean uniforms to ensure that food is handled safely and hygienically. Key components include rigorous cleaning and sanitization protocols for equipment, facilities, and personnel. Additionally, according to the research of Kamboj et al. (2020) food hygiene practices can be significantly improved by providing a physical and social environment that fosters the application of correct food handling behaviors. Furthermore, research findings indicate that ensuring access to clean and disinfected water for washing fresh vegetables is essential at every stage of the vegetable supply chain, from cultivation in production fields to handling by market vendors, before these products are bought or sold (Salamandane et al., 2020).

- *Disposal*

Parsafar et al. (2023) emphasized in their study the importance of implementing effective food waste management strategies to minimize the economic and environmental impact of fruit and vegetable waste. Standardized collection and disposal methods are crucial in reducing waste and associated financial losses. Buhion et al. (2024) highlighted in their study that repurposing fruit and vegetable waste not only lowers costs for vendors but also enhances sustainability by reducing environmental impact. Effective waste disposal management strategies can provide economic and social benefits while promoting sustainable practices.

Todd and Faour-Klingbeil (2024) suggested in their research that producers, such as retailers and foodservice businesses, can collaborate with municipal authorities to repurpose food waste instead of disposing of it in landfills. This can be achieved through methods like heat treatment, dehydration, and mixing, which results in alternative productive uses.

The study of Pinoti et al. (2020) explored transforming fruit and vegetable waste into alternative useful products. A research study by Buhion et al. (2024) proposed strategies to reduce fruit and vegetable waste while promoting a sustainable food system. The same study claims that vendors can generate profit by creating alternative products from unsellable produce and implementing livelihood programs to help others repurpose waste into valuable food items. Fruits and vegetables spoilage could be turn into animal feed (Alfie, 2024), fertilizer (Augustin et al., 2020), fermented products (Buhion et al., 2024), value-added products (Karanth et al., 2023), and meal-ready ingredients (Buhion et al., 2024).

The research of Alfie (2024) highlighted that some markets collaborate with farmers or feed producers to repurpose food waste, such as spoiled fruit, as livestock feed, ensuring its continued use in animal nutrition. Augustin et al. (2020) stated in their study that food waste is often managed through composting and anaerobic digestion. Composting transforms waste into fertilizer for homeowners and farmers, aiding in ecological restoration, including reforestation and wetland rehabilitation. According to the Development Academy of the Philippines (DAP) (2021), the administration can conduct workshops to train vendors in creating alternative products like fermented foods. In Guiuan, Eastern Samar, locals innovatively repurposed inedible fruit and vegetable waste into fermented juice, providing an additional source of income (Development Academy of the Philippines, 2021).

Karanth et al. (2023) proposed in their study that when food spoilage is inevitable, partially spoiled items can be repurposed into value-added products, such as whey from milk, sauces from tomatoes, and jam or confectionery fillings from fruits. Buhion et al. (2024) stated in their research that vendors reduce waste by repurposing produce into pre-sliced fruits or mixed vegetables, which serves as meal-ready ingredients for dishes like Pinakbet or Sinigang, discarding only inedible parts.

Buhion et al. (2024) highlighted in their study that fruits and vegetables are key revenue sources due to their high demand. Consequently, minimizing food waste is economically beneficial, as it reduces household food expenses on a small scale and lowers disposal costs for retailers, processors, and farmers on a larger scale. Neff et al. (2015, as cited in Parsafar et al., 2023) asserted in their study that the implementation of an efficient waste disposal management system is essential for sustainable waste reduction and resource optimization. The study of Carere (2024) emphasized that effective waste disposal management is essential for businesses seeking cost reduction and financial efficiency. Implementing strategies such as recycling, composting, and reusing minimizes disposal costs while mitigating environmental impact, contributing to overall sustainability and performance.

➢ *Financial Performance*

A company's financial performance reflects its ability to manage resources effectively, which is essential for its survival (Liu et al., 2021; Meiryani et al., 2023, as cited in Zuhroh et al., 2024). Specifically, financial performance is defined as a measure of a company's ability to generate profits, operate efficiently, and utilize its assets and liabilities to achieve long-term growth and sustainability (Ameer & Othman, 2012; Brigham & Houston, 2013; Mondal & Ghosh, 2012, as cited in Zuhroh et al., 2024). Furthermore, it serves as a key indicator of a business' success and guides its future development (Al Habsyi et al., 2021; Muttiarni et al., 2022; Widyaningsih & Oksari, 2023, as cited in Fionita et al., 2024).

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A study of Nugroho and Bayunitri (2021, as cited in Fionita et al., 2024) stated that a financially sound firm effectively manages operations and implements plans to achieve profitability. Thus, financial performance can be understood as the analysis of a company's adherence to financial implementation standards.

According to the study of Siswanto and Sari (2023), to determine the development of the company, it is necessary to evaluate its performance through its sales, costs, and generated profit.

Buison et al. (2023) highlighted in their study that several factors influence the financial performance of small-scale businesses. Traditionally, key metrics such as sales, costs, and profitability have been used to analyze their performance. In the study of Pagtolon-an et al. (2024), they defined financial performance broadly refers to a company's overall economic stability. When a business is said to have strong financial performance, it typically indicates increasing revenue, controlled debt, and sufficient free cash flow. Similarly, assessing financial performance plays a crucial role in measuring managerial efficiency and determining a business' overall success (Sukenti, 2022, as cited in Buison et al., 2023).

Sales is defined as the income of a business from the selling of its goods and services (Al Hayek, 2018, as cited in Moise, 2023). Sales growth has a significant impact on a company's financial performance (Isidro & Sobral, 2015, as cited in Yeni et al., 2025). Further, the company incurs various costs such as raw materials, factory, and labor costs that generally affects the sales and profit of the company (Markonah et al., 2020; Weygandt et al., 2020).

Research findings from Mukayivara and Rusibana (2024) stated that the complex link between costs and financial performance becomes evident. The increasing disparity between revenue generation and rising production costs has a direct impact on the financial performance of firms. Hada and Mihalcea (2020) defined in their research that profit is the best-known performance indicator and a reward that a company can receive for taking risks. Aishya and Umami (2022, as cited in Diaz et al., 2023), emphasized in their studies that profitability serves as a crucial indicator of financial performance. It is a fundamental measure of a business' success, reflecting its capability to generate revenue from operations and reinvest earnings for further growth.

Economic growth will be influenced by efficient financial performance, followed by the stability of small and medium-sized enterprises (Diaz et al., 2023). In addition, the study of Nguyen et al. (2021, as cited in Diaz et al., 2023), found that competitive advantage is positively correlated with financial performance. This suggests that when a small or medium enterprise (SME) gains a competitive edge, it is more likely to experience higher sales and increased profits, ultimately enhancing its financial performance. Conversely, a lack of competitive advantage may lead to declining financial outcomes.

- *Sales*

Sales revenue serves as a critical indicator of a company's financial performance, reflecting its ability to generate revenue and meet market demand. The study of Arief et al. (2023) indicated that a company's successful marketing and sales strategies are reflected in a higher sales growth rate, consequently leading to increased profits and financial stability, which can prevent financial distress. Conversely, a significant decline in sales growth can negatively affect a company's assets, profits, and debt, potentially resulting in financial distress (Arief et al., 2023).

As stated in the studies of Putri and Rahyuda (2020, as cited in Sumanion et al., 2023), sales growth, as reflected in annual financial statements, indicates a company's future prospects and profitability. Additionally, according to the study of Yeni et al. (2025), sales growth can be evaluated by analyzing changes in total sales revenue. In addition, sales performance is the amount of sales generated during a given period in comparison to predetermined sales levels or benchmarks. According to the research of Kunga (2016, as cited in Sumanion et al., 2023), sales performance is related to an organization's or a salesperson's capacity to close deals with customers while adhering to set goals.

Sumanion et al. (2023), stated in their study that sales volume is a crucial statistic used by supermarkets to measure their sales performance. In addition, sales volume is a useful metric that helps supermarkets determine their market share and competitiveness. The higher the sales volume, the greater the market share, and the more competitive the business, leading to a great sales performance. The results from the studies of Kienzler and Kowalkowski (2017, as cited in Sumanion et al., 2023), showed that higher selling prices led to lower sales volume but higher revenue, while lower selling prices led to higher sales volume but lower revenue. This suggests that finding the optimal selling price is crucial for maximizing sales performance.

According to the research of Sumanion et al. (2023), sales discounts favor customer behavior, including improved purchase intention, higher purchase volume, and increased customer loyalty. In order to draw customers who will then buy other, more lucrative products once inside the store, retailers use the promotional approach known as deep discounting, which involves advertising things at prices that are much below their typical shelf prices (Sumanion et al., 2023). Additionally, deep discounting increases sales and profitability because once consumers are in the store, they tend to purchase other non-promoted items with higher profit margins in extension to the deeply discounted item (Sumanion et al., 2023).

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Store managers in the fruits and vegetables sector oversee ordering, display, and replenishment while being assessed on sales performance and waste reduction, with spoilage performance an important indicator for retailers, measured as a percentage of sales for benchmarking (Kirci et al., 2022). To promote sales, retailers should focus on evaluating and adjusting merchandising efforts, such as improving product placement and appeal (Winkler et al., 2020). Additionally, high price reductions can significantly boost the sales or consumption of fruits and vegetables, demonstrating the importance of pricing strategies in driving consumer behavior (Schneider et al., 2021).

- *Cost*

The foundation of effective financial management lies in the comprehensive understanding and control of costs. To begin with, costs are recognized as inherent to a company's operational activities, including, but is not limited to, managerial salaries, communication and rental fees, sales-related expenses, and retailing costs (Temitayo & Adegbie, 2020). Consequently, effective cost management has emerged as a critical determinant of financial success, particularly within the finance industry, where meticulous management of resources is paramount (Joshi, 2024).

As stated in the study of Nwanyanwu et al. (2023), the strategic reduction of costs directly contributes to profit maximization, enabling companies to offer goods and services at competitive prices, it aims to eliminate unnecessary expenditures throughout the transportation, storage, sales, and distribution processes, thereby streamlining operations and enhancing efficiency. In addition, cost reduction signifies a genuine and lasting decrease in the per-unit cost of goods or services, maintaining their suitability for the intended purpose, as a crucial strategy for achieving and sustaining financial health (Murugan & Ramprathap, 2022).

Business cycles influence consumption patterns, leading to variations in costs (De Abreu & Rosslyn-Smith, 2021). Operational costs have a significant positive impact on financial performance. Since expenses are necessary before producing goods or services, cost management is crucial for business operations. Operating expenses are a key factor in determining operational income, which plays a crucial role in various financial metrics. As a result, the smaller a company's running costs, the more profitable it is in general (De Abreu & Rosslyn-Smith, 2021). The study of Buison (2023) identified fixed and variable costs as the two main categories comprising operational costs.

According to the research of Setyawati et al., (2023), business activities influence three cost behavior patterns. First, variable costs fluctuate with changes in business activity, such as raw material and direct labor costs. Second, fixed costs remain constant regardless of activity levels within a specific period. Lastly, mixed costs combine elements of both variable and fixed costs. According to the studies of Siregar et al. (2019, as cited in Setyawati et al., 2023), electricity usage costs serve as an example of variable costs, while the electricity subscription fee represents a fixed cost. Tautho et al., (2024) stated in their research that high transportation costs can lead to increased operational expenses, forcing farmers to raise the prices of their harvests. Inventory costs are also considered a business expense, similar to labor and utilities, and are directly associated with the value of goods sold (Miller, 2019).

- *Profit*

Profitability is a crucial aspect of a company's financial health, as it indicates its future potential and long-term survival (Darmawan, 2020, as cited in Kusumadewi et al., 2023). A company's strong profitability demonstrates effective and efficient operations, which in turn attracts investors and creditors, ensuring its continued operation (Endri et al., 2020, as cited in Tudose et al., 2022). The research of Endri et al. (2020, as cited in Tudose et al., 2022) has shown that companies can increase their profits by operating efficiently, increasing revenues and profit margins, and carefully managing liquidity to boost sales growth. These findings highlight the importance of profitability in ensuring a company's financial sustainability and attractiveness to investors.

According to the studies of Temitayo and Adegbie (2020), profitability, driven by the interaction of sales and cost variables, is a crucial factor in assessing financial performance. Furthermore, economic downturns negatively impact firms' financial stability, necessitating a focus on profit maximization for sustainable financial performance (Temitayo & Adegbie, 2020). In fluctuating economic conditions, businesses prioritize maximizing profitability as a primary performance indicator (Hada & Mihalcea, 2020). Issues such as unexpected expenses, budget deficits, and poor resource allocation impede an industry's ability to maintain consistent profitability (Mukayivara & Rusibana, 2024). In addition, rising fixed costs can be offset by increased sales, leading to lower costs and greater profits, thus enhancing profitability through operating leverage (Kalash & Bilen, 2021).

Angelia et al. (2021) discussed in their research that increased profit generation signifies enhanced financial performance for a company. Organizations commonly prioritize profit maximization, as management views profitability as a key measure of success (Nwanyanwu et al., 2023). Reddy et al. (2019, as cited in Sangawi et al., 2023), stated in their study that the company's performance is evaluated through its profit margin, including gross profit margin (Ratnasari & Handayani, 2013), operating profit margin (Darsono, 2005), net profit margin (Munawir, 2001), which indicates its ability to lower production costs while expanding sales capacity.

The Gross Profit Margin (GPM) reflects a company's gross profit relative to sales revenue and is influenced by pricing and costs, where higher sales prices improve profitability, while increased costs reduce GPM (Mahdi & Khaddafi, 2020). Operating

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Profit Margin (OPM) measures a company's ability to generate profit after covering fixed and operating costs, with higher costs lowering OPM and reduced costs improving it (Yoshua, 2012, as cited in Mahdi & Khaddafi, 2020). Net Profit Margin (NPM) represents the percentage of net profit derived from total sales, reflecting the company's efficiency in converting revenue into profit after taxes, with a higher ratio signifying greater profitability (Suhardjono, 2006, as cited in Mahdi & Khaddafi, 2020).

Due to the perishable nature of fruits and vegetables as stated in the study of Yogesh & Ravidran, (2023), retailers reduce the cost of their products as soon as their freshness decreases, which ultimately affects their overall profitability (Li et al., 2024). In the evolving field of perishable goods management, it is important to balance waste management and profitability (Li et al., 2024). Post-harvest losses reduce food supply and drive-up market prices, threatening industry sustainability and profitability, while managing spoilage and aligning sales decisions with objectives can enhance supply chain and long-term profitability (Caliat et al., 2024; Dabebe, 2022; Liu et al., 2021; Talukder et al., 2023).

- *Business Profiles and Spoilage Management Practices*

Suhartono et al. (2022) stated in their study that a business profile provides clear, accurate, and concise details about a company to build trust with potential customers and investors. Furthermore, Suhartono et al. (2022) represented business profile as a detailed summary of a particular business or organization under analysis. The nature of a product aligns with a business' description based on the type of commodity, outlining the goods it offers (Rasimikayati et al., 2023). According to the study of Hastuti et al. (2019), the duration of a business' operation reflects its longevity, competitiveness, and ability to seize economic opportunities. Additionally, Kusuma et al. (2021), explained in their study that business capitalization indicates the size of a company, which can be measured by its total assets.

Evidence suggests that fruits, particularly soft and climacteric ones, are more affected than vegetables (García et al., 1995, as cited in Sillué et al., 2023; AESAN Scientific Committee, 2023). The combination of high sugar content, enzymatic activity, and fragile texture makes fruits more prone to rapid spoilage when improper handling and storage conditions are present (García et al., 1995, as cited in Sillué et al., 2023). Conversely, in 2023, AESAN Scientific Committee found in their study that while leafy vegetables suffer from dehydration and microbial risks, certain vegetables, such as root crops and tubers, exhibit greater resistance to spoilage due to their lower respiration rates and protective outer layers. Josue (2022) found in their study that fresh fruit and vegetable retailers prioritize selling vegetables over fruits due to their hardier nature that could last a little longer than fruits.

Barth et al. (2022) emphasizes the importance of well-timed purchasing to minimize holding time, which helps maintain the freshness and safety of both fruits and vegetables. According to Alegbeleye et al. (2022), selecting high-quality produce and ensuring proper sanitary handling are essential steps in reducing microbial and physiological spoilage in fruits and vegetables. The same study noted that appropriate storage conditions such as temperature and humidity control are vital to managing microbial spoilage in both fruits and vegetables, suggesting that similar storage protocols can be effectively applied across these categories (Alegbeleye et al., 2022).

The research study by Sonwani et al. (2022) highlighted that an artificial intelligence approach is a promising spoilage management practice that can effectively slow down the spoilage of products. However, Sonwani et al. (2022) further indicated that small-scale greengrocers often rely on the same and similar traditional practices due to their lack of knowledge and limited access to technological advancements. This reliance on conventional methods persists regardless of their operational longevity.

According to the study of Peng et al. (2020), prior entrepreneurial experience enhances business performance, particularly within certain industries and at different stages of a company's growth. The length of a firm's operation plays a role in shaping its experience. Furthermore, the research of Peng et al. (2020) emphasized that experienced vendors tend to adopt efficient waste management strategies, such as providing discounts on imperfect produce and utilizing quality assurance techniques. These approaches contribute to minimizing economic losses and improving waste management (Buhion et al., 2024). Findings from the research of Buhion et al. (2024) indicated that various strategies to minimize waste are being employed by vendors with greater experience, such as following the First-In, First-Out method, repurposing unsold produce into new products, and returning damaged items to suppliers.

Buhion et al. (2024) suggested in their study that these practices are refined through years of experience, indicating that operational expertise plays a crucial role in enhancing waste management. However, according to the study of Zhao et al. (2020), spoilage during transportation can be reduced through better handling and logistics systems. Technological advancements in inventory and supply chain management software have made these improvements more accessible to small-scale operators, giving newer businesses a potential edge due to their greater flexibility and adaptability to modern technologies (Zhao et al., 2020).

According to the studies of Natsir and Yusbardini (2020, as cited in Mahinay et al., 2023), capitalization reflects a firm's efficiency in utilizing working capital derived from its assets to maximize its value. With substantial resources, a firm can effectively pursue its desired investment activities. In view of this, a research study suggests that financial capacity enables businesses to adopt advanced technologies and infrastructure, thereby reducing food waste (Handayati & Widyanata, 2024). Abitria (2024) highlighted in their study that food vendors face internal challenges like inadequate storage, leading to waste and spoilage. Compliance with

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regulations, though costly, ensures safety and sanitation. Therefore, investing in better equipment and adhering to food safety can improve efficiency and reduce waste, implying that vendors with greater capitalization adopt more effective food waste management strategies. However, significantly reducing spoilage through careful handling to prevent physical damage does not necessarily demand substantial financial investment. Proper handling practices can effectively limit microbial contamination and physiological stress in fresh produce, serving as a low-cost yet impactful strategy to maintain quality and extend shelf life (Kumar et al., 2021).

- *Business Profiles and Financial Performance*

Financial performance is influenced by business profile, which can differ based on the nature of products, years of business operation, and capitalization. Understanding the nature and concept of a product is crucial for marketers to create effective strategies, ultimately impacting profitability and overall financial performance (Kumar, 2022). Research conducted by Mallinguh et al. (2020) indicated that the years of business operation is a crucial factor influencing its financial performance. Moreover, capitalization has a positive influence on the sales growth of the business (Irfan & Ali, 2017, as cited in Kusuma et al., 2021).

Fruits and vegetables are perishable agricultural commodities that significantly influence financial performance due to their biological characteristics, market dynamics, and storage requirements (Boufous et al., 2023). Their nature, such as perishability, shelf life, and production cycles, affects financial outcomes in terms of sales, profitability, and operational costs (Liu et al., 2018, as cited in Alsharafat et al., 2024).

Fruits are highly susceptible to post-harvest losses caused by improper handling, requiring investments in cold storage, packaging, and transportation infrastructure to maintain financial viability (Liu et al., 2018, as cited in Alsharafat et al., 2024). The perishability and seasonal nature of vegetables require efficient supply chain management, refrigeration, and quick turnover to minimize spoilage and financial losses for businesses involved in their sale (Pariyanti, 2017, as cited in Rasimikayati et al., 2023). The study of Josue (2022) found that fresh fruit and vegetable retailers prefer selling vegetables since they are available year-round and more cost-effective than seasonal fruits, impacting overall financial performance.

A firm's long-term survival boosts financial performance as market experience gives mature companies a competitive edge over newer firms struggling with costs (Rwakihembo et al., 2023). According to the study of Khamis et al. (2018, as cited in Suminah et al., 2022), the longer a business had operated, the more stability it could achieve. Businesses that have been in operation for a long period of time typically exhibit higher financial stability serving as a sign of its success (Khamis et al., 2018, as cited in Suminah et al., 2022). Businesses that thrive and survive over the years usually overcome numerous challenges and establish a strong reputation (Radipere & Dhliwayo, 2014, as cited in, Ilmika et al., 2023). Small and medium enterprises often fail due to poor financial performance, with younger and adolescent enterprises struggling with internal inadequacies, economic downturns, and competition (Mallinguh et al., 2020).

Herman and Zsido (2023) suggested in their study that firms with robust capital and stable financial frameworks are most likely to attain favorable financial results, highlighting the significance of sufficient capitalization in maintaining financial sustainability. The capitalization of the production process is characterized by the efficient use of various components that will increase the value added and the profit (Pronko et al., 2021). Capitalization is the key component in a business, as it is the source of funds that a business requires in order to grow and expand.

In the Philippines, Addo (2017, as cited in Cammayo & Cammayo, 2020), found in their studies that increased business capitalization improves financial performance. Data from the European Union (EU) indicates a positive link between capital and the financial success of small businesses. Adequate capital is essential for small businesses for ensuring profitability and financial stability (Hastuti et al., 2019).

- *Relationship between Spoilage Management Practices and Financial Performance*

Alegbeleye et al. (2022) found in their studies that washing and drying fruits and vegetables helps market vendors reduce spoilage, thereby minimizing financial losses. Similarly, Buhion et al. (2024) observed in their investigation that vendors employ these techniques to mitigate produce's deterioration, further noting the importance of limiting degradation to minimize adverse financial losses. Furthermore, Buhion et al. (2024) highlighted in their work that an innovation in Guiuan, Eastern Samar, where residents transform inedible fruits and vegetables from the public market into fermented juice, creating a marketable fertilizer that generates additional income. Moreover, the study of Buhion et al. (2024) indicated that some fruits and vegetable vendors are trying different practices to handle spoilage of their produce, which helps them reduce their financial risk.

The Food and Agriculture Organization (FAO) indicated in their findings that approximately 14% of global food production is lost to pre-retail spoilage, equating to an estimated annual financial loss of $400 billion, with concomitant negative impacts on food security, environmental sustainability, and stakeholder profitability (Taichman, 2024). The food waste in the US reaches up to 40%, with approximately 133 billion pounds lost at the retail and consumption stages (Herron et al., 2022). They further assert that temperature abuse (TA) during the supply chain accelerates food spoilage, exacerbating global food loss (pre-retail) and waste (post-retail) issues, which results in financial losses and compromised food security (Herron et al., 2022).

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According to the study conducted by Bayogan et al. (2023), in selected public markets in Davao Del Sur, Bukidnon, and Cagayan De Oro, inadequate postharvest handling practices, in conjunction with pre-harvest conditions, significantly contribute to losses in fruits and vegetables. The researchers specifically identify a lack of proper cleaning, insufficient postharvest treatments, and elevated temperatures as exacerbating physical damage and spoilage, leading to reduced shelf life and high rates of rejection and subsequent wastage in wholesale and retail settings (Bayogan et al., 2023).

In the research study conducted by Buhion et al. (2024), they found that a positive correlation between spoilage reduction practices employed by fruit and vegetable vendors and their profitability, indicating that maintaining high product quality is crucial for meeting consumer freshness expectations.

Furthermore, Ping et al. (2024) demonstrated in their study that advanced data analytics can optimize vegetable restocking and pricing strategies, ultimately enhancing profitability, by identifying sales patterns and forecasting demand, these methods address challenges associated with the short shelf life and variable quality inherent in fruits and vegetables. A research finding from Ratliff (2023) suggested that implementing food spoilage prevention strategies can help reduce waste, which is reflected in factors like profits, budgeting, and inventory management.

- *Business Profiles as Predictors of Financial Performance*

A growing body of research suggests that business profiles, including internal and external factors, significantly influence financial performance (Pramono et al., 2021). These factors encompass business longevity, owner experience, capitalization, and operational efficiency 2(Pramono et al., 2021). Various studies have examined the impact of these attributes, employing correlation and regression analyses to determine their predictive power (Pramono et al., 2021).

Chiliya and Roberts-Lombard (2012) found in their study that in South Africa, small grocery stores with experienced owners and longer market presence had higher profitability. Similarly, the study of Puspaningrum (2019) reported that SMEs in Malang City, Indonesia, with extended operational years exhibited stronger financial growth due to improved efficiency and customer trust. These findings suggest that experience and stability are critical elements of financial success (Puspaningrum, 2019). Previous research also showed that the longer a business has been in operation, the better the financial performance due to better understanding of the market (Hastuti et al., 2019).

Additionally, Ghimire (2015) indicated in his study that the firm age, basically the number of years a business is operating in the market, is an important determinant of financial performance. Further, the study concluded that in the life cycle effect, the newer businesses are more volatile compared to the older companies (Ghimire, 2015). Kaguri (2013, as cited in Ghimire, 2015), stated that older businesses have a more stable growth as they continue to mature in the industry and learn more about market positioning and efficient levels.

In the study conducted by Puspaningrum (2019), it is stated that the growth of a business, especially in financial aspect, is influenced by the business age or the length of duration that the business unit operates. Whereas Handrimurtjahyo (2014, as cited in Puspaningrum, 2019) stated that longer business has more experiences that will allow the business to operate better and grow faster. However, from another point of view, older firms suffer from “liabilities of age” due to lower commitment and involvement compared to newer firms, with this the firm’s financial performance diminishes as it gets older (Hastuti et al., 2019).

Amahalu et al. (2017) defined in their research that capitalization or capital adequacy as the quantum of funds that a business institution should have to plan and maintain business activities. Previous research indicated that the initial financial capital invested plays a significant role in a firm's performance and growth (Cooper et al., 1994, as cited in Bokhari, 2022). Sufficient financial resources provide a safeguard against challenges such as slow business start-ups, economic downturns, and poor decision-making (Bokhari, 2022).

Conversely, financial limitations often contribute to business failure and market exit (Crook et al., 2011, as cited in Bokhari, 2022). Furthermore, Harris (2020) explored in the study that the sustainability of small businesses in Phoenix, Arizona, and found that companies with well-structured capitalization strategies were more likely to achieve financial stability.

The study of Basch (2017) emphasized that the high growth rates of smaller businesses are oftentimes constrained by internal challenges. This suggests that some smaller businesses have limited funding and lack resources and access to acquiring capital financing (Basch, 2017). Access to capital is a challenge to small business owners and even if they qualify for financing many of them avoid pursuing it (Basch, 2017).

In a research study by Winarsih et al. (2021), it is revealed that if financial capital is bigger, meeting customer demands is easier as it also increases productivity in business activities hence, generating profit is easier. The study of Winarsih et al. (2021) stated that if financial capital increases, the financial performance of a business also increases. Thus, there is an implication that the bigger the capitalization, the bigger or higher the financial performance of a business (Winarsih et al., 2021). However, according to the research study of Mukaddam and Sibindi (2020), they highlighted that capitalization and financial performance has a weak

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or no relationship at all.

In Azerbaijan, a study evaluating the financial performance of the fruit and vegetable sub sectors from 1995 to 2020 found that vegetables generally outperformed fruits in terms of profitability and production between 1999 and 2014 (Niftiyev, 2021).

Several factors contribute to these differences wherein vegetable production is labor-intensive and highly dependent on short production cycles, making it susceptible to seasonal price fluctuations and economic volatility (Spoor & Visser, 2001, as cited in Niftiyev, 2021). Fruits, on the other hand, require long-term investment but provide more consistent returns, benefiting from their role in international trade (Kerimova, 2014, as cited in Niftiyev, 2021).

Furthermore, empirical studies from Niftiyev (2021) and Aslund (2013, as cited in Niftiyev, 2021) used regression analysis providing deeper insights into the financial performance of the fruit and vegetable subsectors. While vegetables have historically demonstrated higher profitability, they are also more vulnerable to external economic shocks (Niftiyev, 2021). Fruits, on the other hand, provide more consistent financial performance due to their stable demand and lower exposure to macroeconomic fluctuations (Aslund, 2013, as cited in Niftiyev, 2021).

In the multiple regression analysis of business profile predicting financial performance of Hastuti et al. (2019), they revealed in their study that the years of business operation or the age of a business has an influence in the financial performance of a business. The study of Mukaddam and Sibindi (2020) also indicated that the capability of a business to operate more efficiently and meet customer demands also depends on the amount of capitalization that a business has. In addition, a multiple regression analysis was conducted to assess the relationship between the nature of products and financial performance (Kusumah et al., 2023). The regression analysis in the study conducted by Alsbu et al., (2023) also confirmed that nature of products serves as predictors of financial outcomes.

- *Synthesis*

The review of the related literature and studies presented in this chapter revolves around spoilage management practices and financial performance of the small-scale greengrocers, while also utilizing business profiles as indicators. Related literature and studies affirm a strong and positive correlation between spoilage management practices and financial performance. Related studies consistently demonstrate that businesses that implement spoilage management practices experience lower operational costs, higher sales, and improved profitability. The accumulated previous related studies also indicated that business profiles such as nature of product, capitalization, and years of business operation could significantly predict financial performance of business.

Majority of the related studies heavily focused on various kind of businesses including micro, small, and medium enterprises (MSMEs), small and medium-sized enterprise (SMEs), food and product retailers, and even smallholder farming business, but little to no studies was conducted to cater specifically for the small-scale greengrocers. Additionally, most of the findings were from general food and beverage industries, instead of targeted data from the small-scale greengrocers or fruit and vegetable retailers. Furthermore, most of the related literature and studies were conducted in global and asian contexts, with limited studies addressing the issue in the national and local context.

The insights from the related studies and literature will be utilized as the basis in assessing the key indicators of the study's main variables. The key indicators under spoilage management practices will be assessed based on the extent of utilization by small-scale greengrocers. Moreover, indicators of the dependent variable will determine the effectiveness and influence of spoilage management practices to the financial performance. Through these, the study will provide a structured and comprehensive approach towards understanding the correlation between spoilage management practices, business profiles, and financial performance. With this, the study will be able to identify the problems, gaps and opportunities that will be used as a guide in presenting recommendations to the small-scale greengrocers to improve their financial performance.

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CHAPTER THREE
METHODOLOGY

This chapter covers the methodology of the study, including the research design, participant selection, sample size, sampling method, research instrument, their validity and reliability, procedures for gathering and analyzing data, and ethical considerations.

➢ *Research Design*

This study employed a descriptive-correlational research design, with predictive analysis, and utilized a quantitative approach.

A descriptive research design will allow the researchers to characterize current strategies and identify patterns within the industry (Siedlecki, 2020). This study determined the spoilage management practices in terms of skilled procurement, transportation, storage, handling, and disposal. In addition, the financial performance of small-scale greengrocers in terms of sales, cost, and profit. Hence, the descriptive research design is the most appropriate type of research to be used.

Moreover, as stated by Devi et al. (2022), the correlational research design is a study approach used to explore the connections that may exist at different levels between two or more variables within a single group. It is a non-experimental research method known as correlational research that employs statistical analysis to assess the relationship between two variables. This research design examined the correlations between variables without permitting the researcher to modify or control them. It will follow a non-experimental approach to analyze these relationships without altering the variables. This study utilized a correlational design to evaluate the connection between the extent of spoilage management practices and the financial performance of small-scale greengrocers. Furthermore, it determined whether spoilage management practices and business profiles are predictors of financial performance.

In addition, the study used a quantitative approach to collect and analyze numerical data, enabling data summarization, pattern identification, prediction, and causal relationship testing while allowing generalization to larger populations (Rana et al., 2021). It supports assessing key financial indicators and spoilage management practices efficiency through structured survey instruments. This method also quantified effect sizes, determined association strengths, prioritized factors, and assessed evidence effectiveness. Statistical techniques identified trends, evaluated associations, and developed evidence-based conclusions. Ultimately, integrating a descriptive-correlational design with a quantitative approach provided an empirical basis for evaluating spoilage management practices and financial performance.

➢ *Participants of the Study*

The participants of the study comprised the small-scale greengrocers in one of the major public markets in Bacolod City, as identified in the records provided by the South Public Market Administration Office. Based on the records provided, there were a total of 31 fruit vendors and 84 vegetable vendors. Overall, there were a total population of 115 small-scale greengrocers operating within the market. Additionally, the total sample size of 89 was determined using Yamane's formula, considering a 5% margin of error to ensure a representative sample of the population. A 5% margin of error was selected because it strikes a balance between accuracy and practicality, providing statistically reliable data while ensuring that the sample remains manageable given the study's constraints.

A stratified random sampling method was used to select the participants, ensuring that each small-scale greengrocer has an equal chance of being included in the study (Etikan et al., 2016). Wherein, after computing for the proportionate sampling, the researchers interviewed 65 vegetable vendors and 24 fruits vendors. On top of that, during the conduct of this process, all eligible small-scale greengrocers were listed in a spreadsheet, assigned unique identification numbers, and randomly selected using an online random selection tool, such as a wheel of names or an Excel randomizer. This method was chosen for its fairness, ease of implementation, and ability to eliminate selection bias.

Table 1 Distribution of Samples

Types of Vendors	N	%	n
Fruit Vendors	31	27%	24
Vegetable Vendors	84	73%	65
Total	115	100%	89

The researchers' methodology was well-suited for studying a large number of small-scale greengrocers while ensuring the reliability and validity of the collected data. The study was designed to eliminate biases throughout the sampling process, from initial selection to final sample determination. This systematic approach enhances the accuracy and objectivity of the findings on spoilage management practices and financial performance.

➢ *Research Instrument*

This study used an adopted standardized questionnaire, as well as a researcher-made questionnaire constructed based on related literature that served as the study's instrument for data collection. The questionnaire was divided into three parts: Part I consisted of

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the business profiles of the greengrocers in terms of their nature of product, capitalization, and years of business operation. Part II contained questions that measured the extent of spoilage management practices of small-scale greengrocers in terms of procurement, transportation, storage, handling, and disposal. Part III included items that measured the level of financial performance of small-scale greengrocers in terms of sales, cost, and profit.

The researcher-made questionnaire included spoilage management practices as its variable and the adopted standardized questionnaire included financial performance as its variable. Items from spoilage management practices were formulated based on the studies of Buhion et al. (2024), Singh et al. (2025), Sharma and Sharma (2024), Kaur et al. (2023), and Parsafar et al. (2023). Furthermore, items pertaining to financial performance were adopted from the studies of Diaz et al. (2023), particularly the cost items, and Millendez et al. (2023), particularly the sales and profit items.

Additionally, *Hiligaynon* translations of all items of the researcher-made and adopted standardized questionnaires were also made for easier communication and understanding of the small-scale greengrocers' participants of the study.

The following are the scale responses used in order to interpret the data.

Interpretation Scale for the Extent of Spoilage Management Practices

Scale	Verbal Interpretation	Verbal Description
4	Very Great (VG)	Practiced at all times.
3	Great (G)	Practiced most of the time.
2	Low (L)	Practiced in a few instances.
1	Very Low (VL)	Practiced in very few instances.

Interpretation Scale for the Level of Financial Performance in terms of Sales

Scale	Verbal Interpretation	Verbal Description
4	Very High (VH)	Sales consistently increased over the past six months, with no periods of decline.
3	High (H)	Sales increased over the past six months, with occasional periods of decline.
2	Low (L)	Sales declined over the past six months, with occasional periods of growth.
1	Very Low (VL)	Sales consistently declined over the past six months, with no signs of improvement.

Interpretation Scale for the Level of Cost

Scale	Verbal Interpretation	Verbal Description
4	Very High (VH)	Cost extremely increased over the past six months, with no periods of decrease.
3	High (H)	Cost increased over the past six months, with occasional periods of decrease.
2	Low (L)	Cost decreased over the past six months, with occasional periods of increase.
1	Very Low (VL)	Cost extremely decreased over the past six months, with no periods of increase.

Interpretation Scale for the Level of Financial Performance in terms of Profit

Scale	Verbal Interpretation	Verbal Description
4	Very High (VH)	Profit consistently increased over the past six months, with no periods of decline.
3	High (H)	Profit increased over the past six months, with occasional periods of decline.
2	Low (L)	Profit declined over the past six months, with occasional periods of growth.
1	Very Low (VL)	Profit consistently declined over the past six months, with no signs of improvement.

In validating the researcher-made questionnaire, the Content Validity Ratio (CVR) method, formulated by Lawshe in 1975, was utilized. This technique evaluated the degree of agreement among experts regarding the essentiality of each item, providing a quantitative measure of content validity through the CVR formula. Critical values were used to ensure that the level of agreement was statistically significant. According to Lindell and Brandt (1999, as cited in Masuwai et al., 2024), the CVR method is transparent, user-friendly, and emphasizes expert consensus on critical items.

The process involved a group of ten (10) panel of experts in business management, finance, and research, who validated the instrument and explored the theoretical construct (Bhattacharyya et al., 2017; Tobón et al., 2020, as cited in Masuwai et al., 2024). Lawshe's (1975) Content Validity Ratio (CVR) was used to validate the survey questionnaire, aiming for an overall validity index ranging from 0.70 to 1.00 and 0.62 to 1.00 per item. After the validation process, seven (7) items were excluded based on the evaluation of the expert validators. The questionnaire achieved a validity index of 0.85 (85%), and was therefore used and considered as the final questionnaire.

Additionally, reliability testing is essential for maintaining consistent measurements. A reliability test was conducted to thirty (30) greengrocers not involved in the study, using Cronbach's Alpha to assess reliability. A reliability value within the range of 0.70 to 1.00 was considered good. The questionnaire on spoilage management practices yielded a Cronbach's Alpha of 0.734, indicating

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that it was reliable.

➢ *Data Gathering Procedures*

The data gathering process for this study was conducted in a systematic and organized manner to ensure the collection of accurate and reliable information from the small-scale greengrocers in one of the major public markets in Bacolod City. Prior to data collection, the researchers coordinated with the South Public Market Administration Office to finalize the list of the small-scale greengrocers in the market.

Before administering the questionnaires, the researchers provided each participant with an Informed Consent Form, explaining the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Participants were given the opportunity to ask questions and clarify any concerns, and only those who provided informed consent proceeded to participate.

The adopted standardized and researcher-made questionnaires were administered to the participants in person with the researchers' availability to provide clarifications and answer any questions during the data collection process. The researchers ensured a comfortable environment for the participants and collected the questionnaires upon completion. Completed questionnaires were collected immediately after the participants had finished, and all questionnaires were securely stored in a researcher's room, accessible only to the researchers, with digital data stored on password-protected devices.

Upon conclusion of the data collection phase, the researchers systematically organized and consolidated all survey responses. Subsequently, a rigorous analysis of the data was conducted to derive meaningful insights. To ensure objectivity and impartiality in the interpretation of results, the tallied responses and calculated findings were thoroughly examined utilizing the professionally licensed SPSS software.

➢ *Data Analysis Procedure*

In accordance with the statement of the problem, descriptive statistical methods were conducted to analyze the data for the descriptive objectives.

For problem 1, to determine the extent of spoilage management practices of small-scale greengrocers in terms of procurement, transportation, storage, handling, and disposal as a whole and when grouped according to the nature of product, capitalization, and years of business operation, mean and standard deviation were used.

Interpretative Scale for the Extent of Spoilage Management Practices

Mean Range	Verbal Interpretation	Verbal Description
3.50 - 4.00	Very Great (VG)	Practiced at all times.
2.50 - 3.49	Great (G)	Practiced most of the time.
1.50 - 2.49	Low (L)	Practiced in a few instances.
1.00 - 1.49	Very Low (VL)	Practiced in very few instances.

For the standard deviation, the interpretation scale was adapted based on the standard descriptive statistical guidelines used in educational research (Fraenkel & Wallen, 2009):

Standard Deviation (SD) Range	Verbal Description
0.00 - 0.49	Very Consistent
0.50 - 0.99	Consistent
1.00 - 1.49	Moderately Consistent
1.50 and above	Not Consistent

For problem 2, to determine the level of financial performance of small-scale greengrocers based on sales, cost, and profit as a whole and when grouped according to the nature of product, capitalization, and years of business operation, mean and standard deviation were used.

Interpretative Scale for the Level of Financial Performance in terms of Sales

Mean Range	Verbal Interpretation	Verbal Description
3.50 - 4.00	Very High (VH)	Sales consistently increased over the past six months, with no periods of decline.
2.50 - 3.49	High (H)	Sales increased over the past six months, with occasional periods of decline.
1.50 - 2.49	Low (L)	Sales declined over the past six months, with occasional periods of growth.
1.00 - 1.49	Very Low (VL)	Sales consistently declined over the past six months, with no signs of improvement.

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Interpretative Scale for the Level of Financial Performance in terms of Cost

Mean Range	Verbal Interpretation	Verbal Description
3.50 - 4.00	Very High (VH)	Cost extremely decreased over the past six months, with no periods of increase.
2.50 - 3.49	High (H)	Cost decreased over the past six months, with occasional periods of increase.
1.50 - 2.49	Low (L)	Cost increased over the past six months, with occasional periods of decrease.
1.00 - 1.49	Very Low (VL)	Cost extremely increased over the past six months, with no periods of decrease.

Interpretative Scale for the Level of Financial Performance in terms of Profit

Mean Range	Verbal Interpretation	Verbal Description
3.50 - 4.00	Very High (VH)	Profit consistently increased over the past six months, with no periods of decline.
2.50 - 3.49	High (H)	Profit increased over the past six months, with occasional periods of decline.
1.50 - 2.49	Low (L)	Profit declined over the past six months, with occasional periods of growth.
1.00 - 1.49	Very Low (VL)	Profit consistently declined over the past six months, with no signs of improvement.

For problem 3, to determine the significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their business profiles, data collected went under the assessment of the normality of the data distribution applying Kolmogorov–Smirnov test, which resulted in a normal distribution of data, and an independent t-test was employed.

For problem 4, to determine the significant difference in the level of financial performance of small-scale greengrocers when grouped according to their business profiles, data collected went under the assessment of the normality of the data distribution applying Kolmogorov–Smirnov test, which resulted in a non-normal distribution of data, hence Mann-Whitney U test was used.

For problem 5, to determine the significant relationship between the extent of spoilage management practices and the level of financial performance of small-scale greengrocers, data collected went under the assessment of the normality of the data distribution applying Kolmogorov–Smirnov test, which resulted in a non-normal distribution of data, hence Spearman's Rank Correlation was used.

For the Spearman's rho correlation coefficient, the interpretation scale was adapted based on the guidelines used in medical and behavioral research (Mukaka, 2012):

Spearman's rho (r_s) value	Verbal Description
0.80 to 1.00 / -0.80 to -1.00	Very Strong (Positive/Negative)
0.60 to 0.79 / -0.60 to -0.79	Strong (Positive/Negative)
0.40 to 0.59 / -0.40 to -0.59	Moderate (Positive/Negative)
0.20 to 0.39 / -0.20 to -0.39	Weak (Positive/Negative)
0.00 to 0.19 / -0.01 to -0.19	Very Weak (Positive/Negative)

For problem 6, to determine if business profiles significantly predict financial performance of small-scale greengrocers. The data follow a normal distribution; hence, Multiple Regression Analysis was utilized.

- *Ethical Considerations*

This study investigating the relationship between spoilage management practices and the financial performance of small-scale greengrocers, necessitates careful consideration of ethical implications to ensure the integrity of the research and the well-being of participants. The ethical considerations prioritized in this study throughout the research process were the usage of informed consent form, the data privacy of the participants, and the responsible handling and disposal of questionnaires.

The usage of Informed Consent Form was used in this study before administering questionnaires to the participants. The participants were fully informed about the study's objectives, purpose, potential risks, potential benefits, and their right to withdraw at any point in time without facing any form of consequences. Additionally, the Informed Consent Form was provided and presented to the participants in a clear manner, using comprehensible language, and avoiding technical terms that might have been confusing for them. Throughout the research process, transparency was ensured by openly communicating all of the research aspects to the participants. This included providing clear information about how their data were collected, stored, analyzed, and used. Researchers also ensured that the participants understood what they were voluntarily participating in and had considered their confidentiality and anonymity in the conducted survey.

In terms of maintaining confidentiality and integrity, the questionnaires were securely stored in a locked cabinet for a 12-month period or until the research was completed, accessible only to the researchers. All of the collected data including the names, survey results, address, and any other data that could identify the participants, were stored in compliance with relevant data protection regulations and institutional policies, ensuring its security and preventing unauthorized access. In addition, to ensure the

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statistical validity and reliability of the findings derived from the collected data, analysis was conducted using professionally licensed SPSS software. In case of potential risks such as breaches of confidentiality or discomfort when sharing sensitive business practices related to spoilage management, these were mitigated through strict adherence to data protection laws, the use of secure storage systems for questionnaires, and the maintenance of anonymity throughout all stages of research. On the other hand, participants benefited from gaining valuable insights into effective spoilage management practices that could improve their financial performance. Additionally, their contributions helped advance broader knowledge that supports reducing food waste and enhancing sustainability within their sector, benefiting both individual businesses and society as a whole.

Moreover, the specified period had elapsed, so the survey results and data were not simply thrown away without proper destruction, as this could compromise the participants' privacy. Thus, questionnaires were shredded to maintain participant confidentiality and anonymity. Furthermore, the conformance to the Data Privacy Act in the Philippines (Republic Act No. 10173) was emphasized in this study. This law laid down crucial rules and regulations for safeguarding people's privacy rights and personal information in the Philippines, which was relevant to the credibility and integrity of research findings. By doing so, the confidentiality of the participants' information was further protected, in accordance with Philippine data privacy laws.

By adhering to these principles, we, as the researchers, ensured the integrity of our findings, protected the rights and privacy of participants, and built trust within the small-scale greengrocers' community. This commitment to ethical research practices was not only a moral imperative but also essential for the credibility and integrity of the study's results.

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CHAPTER FOUR
PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter includes data presentation, analysis, and interpretation of the extent of spoilage management practices and level of financial performance of small-scale greengrocers.

➢ *Extent of Spoilage Management Practices in terms of Procurement*

Table 2 shows the extent of spoilage management practices of small-scale greengrocers in terms of procurement. The result showed that the extent of spoilage management practices of small-scale greengrocers in terms of procurement with (*M* = 3.55, *SD* = 0.47) is perceived as *very great*, which means that efficient procurement processes have been practiced at all times by the greengrocers to manage their spoilages. All items obtained *very great* results with one item having *great*. Among the results, the highest mean score was found in the item, *Determine the quantity of fruits and vegetables to order based on sales projection* (*M* = 3.66, *SD* = 0.56). In addition, *Develop a forecast for fruits or vegetables to anticipate demand (M = 3.57, SD = 0.67)* also got a *very great* result, while the lowest mean score result was identified in the item, *Select suppliers that consistently deliver fruits or vegetables according to the agreed schedule* (*M* = 3.43, *SD* = 0.74).

The findings imply a strong consensus among small-scale greengrocers concerning the scope and implementation of spoilage management practices, particularly in relation to their procurement processes. The relatively low standard deviation suggests that the responses are *very consistent* across the sample. This indicates that the data points deviated by just 0.47 units from the mean, demonstrating a very high level of consistency within the dataset.

The study's results signify that small-scale greengrocers highly prioritize and consistently implement effective strategies in sourcing their produce to minimize spoilage. The high ratings for determining order quantity based on sales projection and developing demand forecasts highlight a strong emphasis on proactive planning to align inventory with expected sales, a very important step in preventing overstocking and food waste. However, while selecting reliable and consistent suppliers is also deemed important, it receives slightly less emphasis compared to the two items having a *very great* result. This might suggest some variability or challenges in finding or maintaining relationships with suppliers who always meet delivery schedules. Nonetheless, the overall emphasis on careful quantity planning demonstrated a sophisticated approach to procurement for managing spoilage effectively at this initial stage.

The studies by Jama and Mohamud (2024), Lestari et al. (2024), and Zhang et al. (2022) collectively support the findings of this study that effective procurement depends on cultivating reliable supplier partnerships, implementing accurate demand forecasting, and applying precise estimation methods. Moreover, reducing produce spoilage is a key priority for small-scale greengrocers, who consistently adopt effective sourcing methods to achieve this goal, as supported by the study of (Jama & Mohamud, 2024). Favorable outcomes on the determining order quantity based on sales projection and developing demand forecasts, exhibited by the high ratings of the responses across procurement indicators, which are also consistent with the findings from other research studies (Lestari et al., 2024; Zhang et al., 2022).

The findings underscore the importance of consistent partnerships with reliable suppliers; however, the results did not reach a fully satisfactory level. This suggests the presence of challenges or unpredictability in developing and maintaining supplier relationships that ensure timely deliveries, which does not totally align with the existing literature (Jama & Mohamud, 2024). Aligning with Jama and Mohamud (2024), effective procurement ensures high-quality goods, strengthens supplier relationships, and enhances competitiveness.

Table 2 Extent of Spoilage Management Practices in Terms of Procurement

Item	M	Interpretation	SD
Overall	**3.55**	**Very Great (VG)**	**0.47**
1. Select suppliers that consistently deliver fruits or vegetables according to the agreed schedule.	3.43	Great (G)	0.74
2. Develop a forecast for fruits or vegetables to anticipate demand.	3.57	Very Great (VG)	0.67
3. Determine the quantity of fruits or vegetables to order based on sales projection.	3.66	Very Great (VG)	0.56

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Extent of Spoilage Management Practices in Terms of Transportation*

Table 3 shows the extent of spoilage management practices of small-scale greengrocers in terms of transportation. The result showed that the extent of spoilage management practices of small-scale greengrocers in terms of transportation with (*M* = 2.67, *SD* = 0.82) is perceived as *great*, which means that effective transportation strategies have been practiced most of the time by the greengrocers to manage their spoilages. The overall results for the transportation indicator are *great* with two items having *great* results while the other one received a *low* result. Among the items, *Maintain the cleanliness and sanitation of vehicles used for transporting goods* (*M* = 3.18, *SD* = 1.10) got the highest mean score, while the lowest mean score was found in the item, *Improve*

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refrigeration systems of vehicles used for transporting goods (*M* =1.80, *SD* = 1.15).

It also suggests an overall moderately strong consensus among small-scale greengrocers concerning the scope and implementation of spoilage management practices, particularly in relation to their transportation strategies. The low standard deviation suggests that the responses are *consistent* across the sample. This indicates that the data points deviated by just 0.82 units from the mean, demonstrating consistency within the dataset. However, all three items under this indicator showed relatively high standard deviations with (*SD* = 1.10), (*SD* = 1.15), and (*SD* = 1.10) respectively. This reflects only moderate consistency in responses, indicating a somewhat weak agreement among respondents. It suggests that their practices and views, particularly regarding the use of refrigeration, differ significantly.

The high standard deviation for maintaining vehicle cleanliness and sanitation (*SD* = 1.10) indicates considerable variation in how consistently greengrocers implement this practice, suggesting that while the rating is great, some may be less diligent, affecting overall product hygiene. Similarly, the high standard deviation for improving refrigeration systems (*SD* = 1.15) suggests considerable variation in the adoption or access to such systems, implying that despite the low rating, a few might use them while most do not, significantly impacting spoilage rates. Lastly, the high standard deviation for planning timely schedules (*SD* = 1.10) indicates considerable variation in the consistency of delivery planning, suggesting that some greengrocers are highly organized while others frequently face delays, which can affect produce freshness upon arrival.

The results reveals that the mentioned transportation items are practiced most of the time by the surveyed small-scale greengrocers as part of their strategies to prevent the quick spoilage of fruits and vegetables. Consequently, the results showed that in terms of transportation, maintaining the cleanliness and sanitation of vehicles used in transporting or delivering the fresh produce is deemed as the top priority of the small-scale greengrocers as it obtained the highest mean score. This indicates that the cleanliness and sanitation of the vehicles are significant in preventing the contamination and spoilage of the fruits and vegetables.

In terms of delivery and travel time under the transportation indicator, small-scale greengrocers and their chosen suppliers also practice the planning of a timely schedule to avoid delay, traffic, or rush hour at a *great* extent, indicating that they are practicing it most of the times or that most small-scale greengrocers are practicing it to ensure timely and efficient delivery of fruits and vegetables. A timely and efficient delivery schedule also shortens the travel time of the fruits and vegetables which generally prevents the fresh produce from spoiling faster or getting damages due to long travel hours.

However, transporting of goods using vehicles with improved refrigeration systems are practiced in a few instances only. This suggests in transporting the goods most small-scale greengrocers are not utilizing refrigeration systems in their delivery vehicles or lack the adequate and needed room temperature in preventing the spoilage of fresh produce. This discrepancy suggests a need for further intervention and improvement in refrigeration practices among small-scale greengrocers. Moreover, the inability of small-scale greengrocers to prioritize refrigeration systems is largely attributed to financial constraints and the high costs associated with acquiring refrigerated vehicles. Consequently, limited access to refrigerated transport increases the risk of spoilage and compromises product quality during delivery.

The study's findings were supported by Singh et al. (2025), who found that maintaining the cleanliness and sanitation of vehicles used for transporting goods, along with ensuring a timely and efficient delivery schedule, is essential for preventing contamination during transit. However, evidence from the present study suggests that small-scale greengrocers still face minor ongoing challenges in consistently maintaining vehicle sanitation and fully adhering to efficient delivery schedules, which might be due to vehicle ownership constraints and inconsistent cleaning practices, resulting in suboptimal outcomes. While they have been effective in reducing produce spoilage through transportation strategies, there is still room for improvement to optimize long-term spoilage management.

The study observed unfavorable outcomes regarding the improvement of refrigeration systems in vehicles used for transporting goods, as evidenced by consistently low responses across transportation indicators. These results contrast with the findings of Al-Dairi et al. (2022), who emphasized that enhanced refrigeration systems significantly reduce damage to fresh produce during transit.

Table 3 Extent of Spoilage Management Practices in terms of Transportation

Item	M	Interpretation	SD
Overall	**2.67**	**Great (G)**	**0.82**
1. Maintain the cleanliness and sanitation of vehicles used for transporting goods.	3.18	Great (G)	1.10
2. Improve refrigeration systems of vehicles used for transporting goods.	1.80	Low (L)	1.15
3. Plan a timely schedule of operations to avoid delay, traffic, or rush hour.	3.04	Great (G)	1.10

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Extent of Spoilage Management Practices in Terms of Storage*

Table 4 shows the extent of spoilage management practices of small-scale greengrocers in terms of storage. The result showed that the extent of spoilage management practices of small-scale greengrocers in terms of storage with (*M* = 3.23, *SD* = 0.45) is

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perceived as *great*, which means that proper storage conditions have been practiced most of the time by the greengrocers to manage their spoilages.

This suggests a strong consensus among small-scale greengrocers concerning the scope and implementation of spoilage management practices, particularly in relation to their storage conditions. The low standard deviation suggests that the responses are *very consistent* across the sample. This indicates that the data points deviated by just 0.45 units from the mean, demonstrating a *very high level of consistency* within the dataset.

However, the item, *Use temperature-controlled methods such as refrigeration, when necessary,* recorded a standard deviation (*SD*) of 1.07, indicating a moderate level of consistency in responses. This suggests a somewhat weak agreement among respondents, with notable differences in their practices and views regarding refrigeration. Such variation may stem from unequal access to refrigeration, differing levels of knowledge, or varying perceptions of its importance. Consequently, this inconsistency reduces the reliability of the mean score, implying that generalizations about the use of temperature-controlled storage within this group should be made cautiously, as it is not a uniformly adopted practice.

Among the results, three items obtained very great results, while the other one obtained low. The highest mean score was found in the item, *Inspect stored fruits and vegetables to remove spoiled ones* with (*M* = 3.84, *SD* = 0.52). This indicates that the regular inspection and removal of spoiled produce is a well-adopted strategy to minimize spoilage and maintain the quality of stored fruits and vegetables. Followed by the item *Use temperature-controlled methods such as refrigeration, when necessary* (*M* = 1.74, *SD* = 1.07), which has the lowest mean score, interpreted as low, highlighting a significant gap in spoilage management. This low score could indicate barriers such as limited access to refrigeration facilities, higher operational costs, or lack of technical knowledge among greengrocers.

The study's findings indicate that, on average, the small-scale greengrocers demonstrate a great level of adherence to storage-related spoilage management practices. The result shows a particularly great performance on spoilage management practices in terms of storage as all its items obtained very great results with only one item having low. It indicates that small-scale greengrocers are doing an excellent job managing spoilage through proper storage, with only minor exceptions. Furthermore, despite the acknowledged benefits of refrigeration, small-scale greengrocers face significant financial constraints and high acquisition costs, which limit their ability to prioritize and implement such systems.

Consequently, targeted interventions and improvements are necessary to overcome these challenges. Nevertheless, greengrocers have shown competence in applying alternative storage strategies that effectively minimize produce spoilage and yield favorable results.

The claims of the studies of Sharma and Sharma (2024), Karanth et al. (2023), Nikolicic et al. (2021) collectively supports the findings of this study that ensuring food remains safe and of high quality by maintaining cleanliness in all storage areas, storing fruits and vegetables in dry areas, and organizing inventory using FIFO method. Additionally, ensuring optimal storage environments is critical for maintaining the quality and freshness of perishable foods, as supported by the existing literature (Yenare et al., 2024). Satisfactory results were identified regarding on the practices of storing fresh produce in clean and dry areas; organizing inventory using FIFO method; and regularly inspecting and removing spoiled produce, demonstrated by the high ratings of the responses across storage indicators, which in agreement with previous research (Sharma & Sharma, 2024; Nikolicic et al., 2021; Karanth et al., 2023).

The study revealed a relatively low level of satisfactory outcomes regarding the use of temperature-controlled methods, such as refrigeration, as indicated by consistently low responses across storage-related indicators. It contrasts with those of Yenare et al. (2024), who highlighted the critical role of temperature control in reducing spoilage and extending the shelf life of fresh produce.

Table 4 Extent of Spoilage Management Practices in Terms of Storage

Item	M	Interpretation	SD
Overall	**3.23**	**Great (G)**	**0.45**
1. Store fruits or vegetables in a clean and dry storage area.	3.74	Very Great (VG)	0.59
2. Use temperature-controlled methods such as refrigeration when necessary.	1.74	Low (L)	1.07
3. Organize inventory using "First In, First Out" method.	3.61	Very Great (VG)	0.76
4. Inspect stored fruits or vegetables to remove spoiled ones.	3.84	Very Great (VG)	0.52

- *Extent of Spoilage Management Practices in Terms of Handling*

Table 5 shows the extent of spoilage management practices of small-scale greengrocers in terms of handling. The result showed that the extent of spoilage management practices of small-scale greengrocers in terms of handling with (*M* = 3.65, *SD* = 0.41) is perceived as *very great*, which means that proper handling techniques have been practiced at all times by the greengrocers to manage their spoilages. The findings indicate a very strong consensus among small-scale greengrocers concerning the scope and implementation of spoilage management practices, particularly in relation to their handling techniques. The very low standard

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deviation suggests that the responses are *very consistent* across the sample. This indicates that the data points deviated by just 0.41 units from the mean, demonstrating a very high level of consistency within the dataset.

However, among the handling-related items, only the use of gloves and sanitized hands by small-scale greengrocers shows a relatively high standard deviation of 1.00, indicating moderate consistency but some variability in practice compared to other handling methods. Although the mean score (M = 3.00) reflects a generally great level of adherence to hygiene practices, the weak agreement among respondents highlights inconsistencies in implementation. This suggests that while many greengrocers understand the importance of hand hygiene and glove use in preventing contamination and spoilage, factors such as limited awareness and resources or financial constraints may hinder full compliance.

Among the results, three items obtained very great results, while the other one obtained great. The highest mean score was found in the item, *sorting of fresh, non-fresh, and damaged fruits or vegetables* (M = 3.89, SD = 0.41), showing that greengrocers prioritize separating produce based on quality to prevent spoilage and maintain product freshness. On the other hand, the *use of gloves or sanitized hands when handling fresh produce* received a lower mean score of 3.00 with a *higher* standard deviation of 1.00, which is interpreted as *great* but shows more variability among respondents.

The results indicate that small-scale greengrocers consistently apply proper handling techniques to manage spoilage effectively, reflecting that greengrocers are mindful of minimizing physical damage during handling. It suggests that handling practices are crucial as it help in identifying and removing damaged goods early, thereby reducing the risk of contamination and spoilage spreading to fresh items. The findings also imply that careful approach of handling is important because bruising accelerates spoilage and decreases the marketability of the produce. In addition, the results indicate that greengrocers understand the importance of proper product arrangement to prevent crushing and deterioration. However, a discrepancy in results suggests that while many greengrocers practice hygiene measures, there is less consistency compared to other handling practices. The relatively lower score and higher variability may point to gaps in hygiene protocols or resource limitations affecting the regular use of gloves or sanitation.

The findings of this study are consistent with those of Kaur et al. (2023) and Karanth et al. (2023), who highlight that best practices in sorting, gentle handling, and proper display are key to maintaining produce freshness and reducing postharvest losses. These approaches are widely recognized as effective for minimizing mechanical damage, preventing spoilage, and preserving product quality throughout the supply chain.

Additionally, greengrocers must possess comprehensive knowledge of safe handling techniques, maintain a committed attitude towards food safety, and consistently implement proper practices, in agreement with the previous research (Putri & Susanna, 2021). The results also reported favorable outcomes regarding the sorting of fresh, non-fresh, and damaged fruits and vegetables; careful handling to avoid bruising; and the proper display of products to prevent excessive stacking or damage. These outcomes were evidenced by high ratings across various handling indicators and are consistent with established best practices and recommendations in the existing literature (Kaur et al., 2023; Karanth et al., 2023).

The findings highlight the critical importance of using gloves or thoroughly sanitized hands during the handling of fresh produce; however, the results fell short of an optimal standard, indicating persistent challenges. These challenges are likely attributable to inconsistent adherence to appropriate glove usage and hand hygiene practices, which does not totally align with the existing literature (Putri and Susanna, 2021). Despite this, continued improvement in handling hygiene is essential for the enhancement of product safety and quality.

Table 5 Extent of Spoilage Management Practices in terms of Handling

Item	M	Interpretation	SD
Overall	**3.65**	**Very Great (VG)**	**0.41**
1. Sorting of fresh, non-fresh, and damaged fruits or vegetables	3.89	Very Great (VG)	0.41
2. Handle fruits or vegetables carefully to avoid bruising.	3.85	Very Great (VG)	0.44
3. Display products properly to avoid excessive stacking or damage.	3.85	Very Great (VG)	0.47
4. Use gloves or sanitized hands when handling fresh produce.	3.00	Great (G)	1.00

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

- *Extent of Spoilage Management Practices in Terms of Disposal*

Table 6 shows the extent of spoilage management practices of small-scale greengrocers in terms of disposal. The result showed that the extent of spoilage management practices of small-scale greengrocers in terms of disposal with (M = 2.39, SD = 0.81) is perceived as *low*, which means that effective disposal management have been practiced in a few instances by the greengrocers to manage their spoilages. The findings indicate a strong consensus among small-scale greengrocers concerning the scope and implementation of spoilage management practices, particularly in relation to their disposal management. The low standard deviation suggests that the responses are *consistent* across the sample. This indicates that the data points deviated by just 0.81 units from the mean, demonstrating consistency within the dataset.

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However, result shows that repurposing spoiled fruits or vegetables as animal feed (SD = 1.21), as fertilizer (SD = 1.26), and as meal-ready ingredients (SD = 1.23) all exhibit moderately consistent responses, suggesting a slightly weak consensus among small-scale greengrocers regarding these practices. Although developing value-added products from slightly spoiled produce (SD = 1.16) is also considered to have moderate consistency, it shows a more consistent response compared to the other items, indicating a relatively stronger consensus among greengrocers. Overall, the relatively high standard deviation across all items shows significant variability in adoption, reflecting uneven access, skills, or preferences despite their recognized benefits, indicating that these practices are either uniformly rare or widely accepted and regularly practiced.

The overall result for the disposal indicator is low with two items having great results, while the other two obtained low results. Among the results, the highest mean score was found in the item, *Transform edible portions of slightly damaged fruits or vegetables into meal-ready ingredients (sliced ingredients for pinakbet, chopsuey, and laswa)* with (*M* = 2.81 *SD* = 1.23), interpreted as great. In addition, *Repurpose spoiled fruits or vegetables as animal feed* (*M* = 2.58, *SD* = 1.21) also got a great result, while the two items that got the low mean score result was identified in the item, *Convert spoiled fruits or vegetables into fertilizer* with (*M* = 2.28, *SD* = 1.26). Followed by the lowest item, *Develop value-added products from slightly spoiled fruits or vegetables (i.e. jams and sauces)* (*M* = 1.89, *SD* = 1.62).

The results imply that many small-scale greengrocers surveyed do not frequently implement certain disposal methods as part of their management strategies. The relatively high mean score in items *transforming edible portions into meal-ready ingredients* and *repurposing spoiled fruits as animal feeds* indicates that greengrocers are more inclined to utilize spoilage in ways that can immediately reduce waste and possibly generate some great economic benefit, which result in suboptimal outcomes only. These practices may be easier to implement and require less technical knowledge or additional resources compared to other methods.

On the other hand, the low mean results in the items *converting spoiled fruits into fertilizer and developing value-added products like jams and sauces* indicates a gap in more sustainable or innovative disposal practices. The low mean result in these practices could also reflect a lack of awareness or access to resources and training on how to effectively convert spoiled produce into value-added products or organic fertilizers. While some disposal practices (animal feed and meal-ready ingredients) are widely or effectively implemented to some extent, the overall approach to spoilage management is lacking, particularly in sustainable or value-adding methods. This points to significant room for improvement in managing food spoilage and reducing waste.

The claims of the studies of Alfie (2024) and Buhion et al. (2024), collectively supports the findings of this study that with redirecting spoiled fruit as livestock feed and repackaging excess produce into meal-ready pre-sliced fruits or mixed vegetable products, greengrocers can effectively minimize waste, lower operational costs, and contribute to environmental sustainability. Although the findings of the study did not reach a fully satisfactory level, greengrocers demonstrated competence in implementing alternative disposal strategies which might effectively minimized spoilage and yielded positive outcomes.

The study revealed unfavorable outcomes in the conversion of spoiled fruits and vegetables into fertilizer, as well as in the development of value-added products from partially spoiled produce, as indicated by consistently low responses across disposal-related items. These findings disagree with the existing literature, such as Augustin et al. (2020), who underscore the critical role of composting in waste reduction and ecological restoration, and Karanth et al. (2023), who highlight the potential for transforming partially spoiled items into value-added products. This discrepancy indicates a need for targeted interventions to improve waste disposal and product repurposing practices among greengrocers. Carere (2024) further emphasizes that effective waste disposal management is vital for businesses aiming to reduce costs and enhance financial efficiency. With this, increased adoption of these strategies by greengrocers could not only improve their waste management practices but also add economic value to their operations.

Table 6 Extent of Spoilage Management Practices in Terms of Disposal

Item	M	Interpretation	SD
Overall	**2.39**	**Low (L)**	**0.81**
1. Repurpose spoiled fruits or vegetables as animal feed.	2.58	Great (G)	1.21
2. Convert spoiled fruits or vegetables into fertilizer.	2.28	Low (L)	1.26
3. Develop value-added products from slightly spoiled fruits or vegetables (i.e. jams and sauces)	1.89	Low (L)	1.16
4. Transform edible portions of slightly damaged fruits or vegetables into meal-ready ingredients (sliced ingredients for pinakbet, chopsuey, and laswa).	2.81	Great (G)	1.23

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Summary of the Extent of Spoilage Management Practices*

Table 7 shows the extent of spoilage management practices of small-scale greengrocers. The spoilage management practices are perceived as *very great* on procurement (*M* = 3.55, *SD* = 0.47), and handling (*M* = 3.65, *SD* = 0.41). While on transportation (*M* = 2.67, *SD* = 0.82) and storage (*M* = 3.23, *SD* = 0.45) it is perceived as *great*, and *low* on disposal (*M* = 2.39, *SD* = 0.81) among small-scale greengrocers.

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The overall results for the summary of the Extent of Spoilage Management Practices are *great* (*M* = 3.1, *SD* = 0.37) with two items having *very great* results, another two items having *great* results, and the other one receiving a *low* result. Among the indicators, handling (*M* = 3.65, *SD* = 0.41 got the *highest* mean score and the indicator procurement (*M* = 3.55, *SD* = 0.47) also achieved a *very great* result. Meanwhile the *lowest* mean score was found in disposal *M* = 2.39, *SD* = 0.81).

The result shows a particularly strong performance on spoilage management practices in terms of procurement and handling. This indicates effective and consistent processing methods in minimizing spoilage. In terms of procurement processes, it is practiced at all times by small-scale greengrocers to manage their spoilages very greatly through selecting reliable suppliers, forecasting demand, and determining order quantities based on sales projections to ensure timely and demand accurate delivery. Regarding handling techniques, it is practiced at all times by small-scale greengrocers to manage their spoilages very greatly through carefully handling, properly sorting, and displaying fresh, non-fresh, and damaged fruits or vegetables using gloves or sanitized hands to prevent damage and maintain quality.

Transportation and storage suggest effective and moderate performance that still has rooms for further improvements. In terms of transportation strategies, it is practiced most of the time by small-scale greengrocers to manage their spoilages greatly through ensuring the cleanliness of transport vehicles and planning timely operations to prevent produce contamination, as well as delays, traffic, and rush hour congestion. However, vehicles' refrigeration systems are only improved in a few instances. Regarding proper storage, it is practiced at all times by small-scale greengrocers to manage their spoilages very greatly through storing fruits and vegetables in a clean, dry area, organizing inventory using the "First In, First Out" method, and regularly inspecting to remove spoiled items. However, temperature-controlled methods such as refrigeration are only utilized in a few instances.

Disposal shows a low rating, indicating inconsistency in its effectiveness. This area requires substantial improvement. It is practiced in a few instances by small-scale greengrocers to manage their spoilages greatly through repurposing spoiled fruits and 80 vegetables as animal feed, and processing slightly damaged but still edible portions into meal-ready ingredients for dishes like pinakbet, chopsuey, and laswa. However, transforming spoiled or slightly spoiled fruits and vegetables into fertilizer or value-added products like jams and sauces are practiced in a few instances.

In addition, the findings may be attributed to factors such as limited awareness, knowledge, and financial resources may hinder small-scale greengrocers from prioritizing the repurposing of nearly spoiled produce. This underscores the need for targeted interventions in waste disposal management to support more effective spoilage management.

The results of the study supported the claims of John and Singh (2025), Singh et al. (2025), Sharma and Sharma (2024), and Kaur et al. (2023) that procurement, transportation, storage, and handling are crucial in terms of management practices used to prevent or reduce spoilage. Moreover, the same studies have confirmed that spoilage management practices such as organized procurement processes, efficient transportation strategies, proper food storage, and effective handling techniques affect food safety. quality, and spoilage reduction.

However, the study's findings regarding disposal were partially unaligned with the study of Carere et al. (2024), which implies that effective waste disposal management, through strategies like recycling, composting, and reusing, is crucial for businesses in managing their spoilages to reduce costs, enhance financial efficiency, and promote overall sustainability and performance. This implies that while spoilage is being managed well up to the point of disposal, the end-of-life stage for spoiled produce requires urgent attention. Poor disposal practices can contribute to increased food waste and missed opportunities for waste valorization or recycling.

Table 7 Summary of the Extent of Spoilage Management Practices

Indicators	M	Interpretation	SD
Overall	**3.10**	**Great (G)**	**0.37**
1. Procurement	3.55	Very Great (VG)	0.47
2. Transportation	2.67	Great (G)	0.82
3. Storage	3.23	Great (G)	0.45
4. Handling	3.65	Very Great (VG)	0.41
5. Disposal	2.39	Low (L)	0.81

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Extent of Spoilage Management Practices When Grouped According to Nature of Products*

Table 8 illustrates the extent of spoilage management practices of small-scale greengrocers when grouped according to the nature of products being sold.

The spoilage management practices in terms of procurement is being consistently practiced at all times across different categories according to the nature of products being sold. The result for small-scale greengrocers who sell vegetables (*M* = 3.56, *SD*

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= 0.45) was interpreted as *very great*. Similarly, the findings for those who sell fruits (*M* = 3.53, *SD* = 0.54) were also reported as *very great*. This similarity in outcomes suggests that the spoilage management practices in terms of procurement have been generally very effective, regardless of the nature of product being sold by the greengrocers.

In terms of transportation, the spoilage management practices are being consistently practiced most of the time across different categories according to the nature of products being sold. The result for small-scale greengrocers who sell vegetables (*M* = 2.62, *SD* = 0.81) was interpreted as *great*. Likewise, the findings for those who sell fruits (*M* = 2.82, *SD* = 0.86) were also reported as *great*. This similarity in results indicates that spoilage management practices during transportation have generally been effective, though there is still room for improvement, regardless of the nature of product sold by the greengrocers.

Most of the time, spoilage management practices in terms of storage are consistent across different categories, depending on the nature of the products sold. The results for small-scale greengrocers selling vegetables (*M* = 3.18, *SD* = 0.49) were interpreted as *great*. Similarly, the findings for those selling fruits (*M* = 3.39, *SD* = 0.30) were reported to be *great*. Regardless of the nature of product that the greengrocers sell, this similarity in results shows that spoilage management in terms of storage have been generally favorable but still suggest room for improvement.

Spoilage management practices related to handling are consistently implemented at all times across different categories, depending on the nature of product being sold. Small-scale greengrocers selling vegetables reported a *very great* rating (*M* = 3.67, *SD* = 0.41), and those selling fruits showed similarly *very great* results (*M* = 3.60, *SD* = 0.42). This consistency suggests that handling-related spoilage management has generally been very effective, regardless of the nature of the products sold by the greengrocers.

In terms of disposal, the spoilage management practices are being consistently practiced in a few instances across different categories according to the nature of products being sold. The results for small-scale greengrocers selling vegetables (*M* = 2.47, *SD* = 0.83) were interpreted as *low*, and those for fruit sellers (*M* = 2.17, *SD* = 0.74) reflected a similarly *low* rating. This consistency indicates that disposal-related spoilage management practices have generally been inadequate, pointing to a critical area that requires improvement, regardless of the nature of product sold by the greengrocers.

The findings revealed that when small-scale greengrocers were grouped according to the nature of product being sold, the overall extent of spoilage management practices for those selling vegetables (*M* = 3.10, *SD* = 0.37) and for those selling fruits (*M* = 3.09, *SD* = 0.39) both resulted in *great* ratings. The relatively low standard deviations for vegetables (*SD* = 0.37) and for fruits (*SD* = 0.39) suggest strong consistency in the management practices across samples.

Across all indicators, the differences in spoilage management strategies between sellers of fruits and those of vegetables were negligible. This indicates that regardless of the nature of product being sold, small-scale greengrocers might be employing a similar extent of overall spoilage management practices, or in terms of procurement, transportation, storage, handling, and disposal in their operations. The slight variations observed do not significantly affect the overall approach to spoilage management in each indicator.

The study's findings imply that the industry might generally maintain effective spoilage control measures regardless of whether handling vegetables or fruits. The mean scores demonstrate that despite the biological and physiological differences between fruits and vegetables, stakeholders may have developed similarly effective management systems for both product categories. This suggests that general spoilage management practices may be successfully applied to both nature of product with minimal need for category-specific approaches.

While both nature of product reports a great extent of spoilage management practices, greengrocers selling vegetables tend to exhibit slightly better outcomes. The findings show that practices used in managing spoilages is more practiced by those selling vegetables, obtaining a result that entails a slight edge in procurement, a marginally stronger extent in handling, and a more notable advantage in disposal than those selling fruits. However, in terms of transportation and storage, those selling fruits reported a slight difference compared to vegetable sellers.

Despite the differences in the results in both categories, the findings suggest that the spoilage management practices are equally and substantially practiced to minimize wastes and spoilages regardless of the nature of the product, with no notable differences. This uniformity contrasts with findings from other studies that emphasize the need for category-specific approaches based on the nature of the product, highlighting that proper handling and storage conditions need to be more implemented in fruits (AESAN Scientific Committee, 2023; García et al., 1995, as cited in Sillué et al., 2023). The findings further align with recent research emphasizing that good procurement practices are foundational to reducing microbial and physiological spoilage in both fruits and vegetables (Alegbeleye et al., 2022; Barth et al., 2022). In addition, it also supports the observations from Alegbeleye et al. (2022), who note that appropriate storage conditions are vital to managing microbial spoilage in both fruits and vegetables, suggesting that similar storage protocols can be effectively applied across these categories.

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Table 8 Extent of Spoilage Management Practices when grouped according to Nature of Product

	Vegetables			Fruits		
Indicators	**M**	**Interpretation**	**SD**	**M**	**Interpretation**	**SD**
Overall	**3.10**	**Great (G)**	**0.37**	**3.09**	**Great (G)**	**0.39**
Procurement	3.56	Very Great (VG)	0.45	3.53	Very Great (VG)	0.54
Transportation	2.62	Great (G)	0.81	2.82	Great (G)	0.86
Storage	3.18	Great (G)	0.49	3.39	Great (G)	0.30
Handling	3.67	Very Great (VG)	0.41	3.60	Very Great (VG)	0.42
Disposal	2.47	Low (L)	0.83	2.17	Low (L)	0.74

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Extent of Spoilage Management Practices when Grouped According to Capitalization*

Table 9 illustrates the extent of spoilage management practices of small-scale greengrocers when grouped according to the capitalization.

Spoilage management practices related to procurement are consistently implemented at all times across different capitalization levels. Small-scale greengrocers with a capitalization of ₱10,000 or less reported a *very great* extent (*M* = 3.60, *SD* = 0.45), while those with capitalization above ₱10,000 showed similarly *very great* results (*M* = 3.50, *SD* = 0.50). This consistency suggests that procurement-related spoilage management has generally been very effective, regardless of the greengrocers' level of capitalization.

The spoilage management practices in terms of transportation is being consistently practiced most of the time across different categories according to the capitalization. The result for small-scale greengrocers with capitalization of ₱10,000 and below (*M* = 2.63, *SD* = 0.81) was interpreted as *great*. Similarly, the findings for those with capitalization of above ₱10,000 (*M* = 2.72, *SD* = 0.85) were also reported as *great*. This similarity in results indicates that spoilage management practices during transportation have generally been effective, though there is still room for improvement, regardless of the greengrocers' capitalization.

Storage-related spoilage management practices are generally applied consistently most of the time across different capitalization levels. Small-scale greengrocers with capitalization of ₱10,000 or less reported a *great* extent (*M* = 3.19, *SD* = 0.52), while those with capitalization above ₱10,000 showed similar *great* results (*M* = 3.28, *SD* = 0.37). This similarity indicates that storage practices have been generally effective, though there remains room for further improvement regardless of capitalization.

In terms of handling, spoilage management practices are being consistently practiced at all times across varying categories according to the level of capitalization. The result for small-scale greengrocers with capitalization of ₱10,000 and below (*M* = 3.70, *SD* = 0.42) was interpreted as *very great*. Similarly, the findings for those with capitalization of above ₱10,000 (*M* = 3.59, *SD* = 0.40) were also reported as *very great*. The consistency in these findings indicates that handling practices for minimizing spoilage are generally very effective, irrespective of the greengrocers' level of capitalization.

Spoilage management practices in terms of disposal are consistently practiced in a few instances across different capitalization categories. The result was regarded as *low* for small-scale greengrocers with capitalization of ₱10,000 or less (*M* = 2.48, *SD* = 0.71). Similarly, the results were likewise perceived *low* for those whose capitalization exceeded ₱10,000 (*M* = 2.30, *SD* = 0.91). This consistency suggests that, irrespective of the greengrocers' capitalization, disposal-related spoilage management practices have generally been insufficient, indicating a crucial area that needs improvement.

The results indicated that, when categorized by capitalization, small-scale greengrocers with both lower (*M* = 3.12) and higher (*M* = 3.07) levels of capital demonstrated a similar *great* overall extent of spoilage management practices. The relatively low standard deviations for those with lower capitalization (*SD* = 0.35) and for those with higher capitalization (*SD* = 0.40) suggest *consistency* in the management practices of spoilage across samples.

The findings indicate that regardless of capitalization, it only has minimal influence on the extent to which small-scale greengrocers implement spoilage management practices overall, or across all indicators, as both capitalization groups, ₱10,000 and below, and above ₱10,000, demonstrated similar levels of practice. The subtle variations in mean scores suggest that the level of capitalization may only marginally be relevant in determining the extent of spoilage management practices adopted, implying a generally uniform approach among greengrocers regardless of capitalization. This suggests that whether with low or high capitalization, there is a conscious effort to reduce spoilage, which might be critical for operational efficiency and profitability. The mean scores demonstrate that despite the financial differences between low-capitalized and high-capitalized greengrocers, they may have developed similarly effective management systems for both capital categories.

Although both capitalization groups demonstrate a great extent of spoilage management practices, greengrocers with lower capitalization tend to achieve slightly better outcomes overall. The results indicate that low-capitalized greengrocers show a marginal advantage in procurement, a slightly higher extent in handling, and a more notable edge in disposal practices compared to

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their higher-capitalized counterparts.

Conversely, greengrocers with greater capitalization performed slightly better in transportation and storage. These findings suggest that implementing effective spoilage management in certain areas, such as transportation and storage, may require higher financial resources, potentially explaining the advantages observed among higher-capitalized greengrocers in these aspects.

Despite the slight variations in results across the two capitalization categories, the findings indicate that spoilage management practices are equally and substantially implemented to minimize waste and spoilage, regardless of the greengrocers' level of capitalization. The absence of significant differences suggests a uniform application of these practices across capitalization groups. This consistency stands in contrast to previous studies, which advocate for differentiated, capitalization-specific strategies to address spoilage more effectively, suggesting that financial factors play a major role in effectively managing spoilages, emphasizing the need for a greater capitalization (Handayati & Widyanata, 2024). The findings contradict the observations from Abitria (2024), highlighting that investing in better equipment and adhering to food safety can improve efficiency and reduce waste, implying that vendors with greater capitalization adopt more effective food waste management strategies. However, literature confirms that minimizing physical damage through proper handling significantly reduces spoilage by preventing microbial entry and physiological stress, and this practice appears well-established regardless of capitalization (Kumar et al., 2021).

Table 9 Extent of Spoilage Management Practices when Grouped According to Capitalization

	₱10,000 and Below			**Above ₱10,000**		
Indicators	**M**	**Interpretation**	**SD**	**M**	**Interpretation**	**SD**
Overall	**3.12**	**Great (G)**	**0.35**	**3.07**	**Great (G)**	**0.40**
Procurement	3.60	Very Great (VG)	0.45	3.50	Very Great (VG)	0.50
Transportation	2.63	Great (G)	0.81	2.72	Great (G)	0.85
Storage	3.19	Great (G)	0.52	3.28	Great (G)	0.37
Handling	3.70	Very Great (VG)	0.42	3.59	Very Great (VG)	0.40
Disposal	2.48	Low (L)	0.71	2.30	Low (L)	0.91

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Extent of Spoilage Management Practices When Grouped According to Years of Business Operation*

Table 10 illustrates the extent of spoilage management practices of small-scale greengrocers when grouped according to the years of business operation.

The spoilage management practices in terms of procurement varied slightly across different categories according to the years of business operation. It is being practiced at all times for small-scale greengrocers with 16 years and below of business operation (M = 3.63, SD = 0.43), as the result was interpreted as *very great*. However, it is being practiced most of the time for those with above 16 years of business operation (M = 3.47, SD = 0.50), as the findings were reported as *great*. This suggests that procurement-related spoilage management has generally been practiced to a slightly *great* extent by those with shorter years of business operation when compared to those with longer years.

In terms of transportation, spoilage management practices are being consistently practiced most of the time across different categories according to the years of business operation. The result for small-scale greengrocers with 16 years and below of business operation (M = 2.76, SD = 0.79) was interpreted as *great*. Similarly, the findings for those with above 16 years of business operation (M = 2.58, SD = 0.86) were also reported as *great*. The consistent results suggest that transportation-related spoilage management practices have been generally effective across greengrocers, regardless of their years in operation, although some opportunities for improvement remain.

Storage-related spoilage management practices are consistently applied across different categories based on years of business operation. Small-scale greengrocers with 16 years or less in operation reported a *great* rating (M = 3.32, SD = 0.42), while those with more than 16 years showed similarly *great* results (M = 3.15, SD = 0.48). This consistency suggests that storage practices have generally been effective, although there is still room for improvement, regardless of the length of business operation.

The spoilage management practices in terms of handling is being consistently practiced at all times across different categories according to the years of business operation. The result was considered *very great* for small-scale greengrocers that have been in business for 16 years or less (M = 3.68, SD = 0.32). Likewise, the results for those who had operated their businesses for more than 16 years (M = 3.61, SD = 0.49) were similarly perceived to be *very great*. The consistency of these results suggests that, regardless of the number of years that greengrocers have been in business, handling practices for reducing spoilage are typically very effective.

Spoilage management practices in terms of disposal are consistently practiced in a few instances across various categories based on the number of years in business. The results were interpreted as *low* for small-scale greengrocers with less than 16 years of business operation (M = 2.32, SD = 0.89), and similarly *low* for those with more than 16 years of business operation (M = 2.47,

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SD = 0.72). This consistency suggests that, regardless of the greengrocers' years of operation, disposal-related spoilage management practices have generally been inadequate, indicating a critical area for improvement.

The findings showed that, when small-scale greengrocers were categorized based on their years of business operation, both those with fewer years (*M* = 3.14) and those with more years (*M* = 3.06) exhibited a *great* overall level of spoilage management practices. The relatively low standard deviations for both groups, 0.36 for those with fewer years and 0.40 for those with more years, indicate a *consistent* application of spoilage management strategies across the sample, regardless of business tenure.

This implies that years of business operation only has minimal influence on the extent to which small-scale greengrocers implement spoilage overall management practices, or across most indicators. Specifically, in terms of transportation, storage, handling, and disposal, both groups, those with 16 years or less and those with more than 16 years of business operation, reported similar levels of practice. These subtle differences in results suggest that the duration of business operation has only a limited relevance in determining the degree of adherence to spoilage management practices in these aspects. This suggests that, regardless of the length of years in business, greengrocers consistently demonstrate a deliberate effort to minimize spoilage, which is likely essential for maintaining operational efficiency and ensuring profitability. The mean scores suggest that, despite differences in business experience between newer and more established greengrocers, both groups appear to have developed similarly effective spoilage management systems across categories. This indicates that effective practices may be adopted regardless of the business's length of operation.

A slight difference was noted in procurement-related spoilage management, with newer greengrocers showing a marginally higher level of consistency, rated as very great, compared to the great rating among more established businesses. This suggests that recently established greengrocers may be slightly more consistent in their procurement practices. Despite this variation, the difference remains minimal, indicating that overall, years of business operation plays only a minor role in shaping the extent of spoilage management practices among small-scale greengrocers.

Although both groups demonstrate a great extent of spoilage management practices, greengrocers with shorter years of business operation tend to achieve slightly better outcomes overall. Despite these slight variations in results across the categories, both still perceived a great result in most indicators except procurement, indicating that spoilage management practices are equally and substantially implemented to minimize waste and spoilage, regardless of the greengrocers' level of capitalization. This consistency stands in contrast to previous studies, which advocate for differentiated, experience-driven strategies to address spoilage more effectively, indicating that length of a business' operation plays a role in shaping its experience, which will lead to better practices. (Buhion et al., 2024; Peng et al., 2020).

However, the slight difference in result in terms of disposal is supported by the study of Buhion et al. (2024), indicating that longer operational expertise plays a crucial role in enhancing disposal waste management. The results are consistent with findings that transportation-related spoilage can be mitigated through improved handling and logistics systems, which are increasingly accessible to small-scale operators due to technological advancements, which corresponds with the slightly higher transportation scores among more recently established greengrocers (Zhao et al., 2020).

Table 10 Extent of Spoilage Management Practices when Grouped According to Years of Business Operation

	16 Years and Below			**Above 16 Years**		
Indicators	**M**	**Interpretation**	**SD**	**M**	**Interpretation**	**SD**
Overall	**3.14**	**Great (G)**	**0.36**	**3.06**	**Great (G)**	**0.40**
Procurement	3.63	Very Great (VG)	0.43	3.47	Great (G)	0.50
Transportation	2.76	Great (G)	0.79	2.58	Great (G)	0.86
Storage	3.32	Great (G)	0.42	3.15	Great (G)	0.48
Handling	3.68	Very Great (VG)	0.32	3.61	Very Great (VG)	0.49
Disposal	2.32	Low (L)	0.89	2.47	Low (L)	0.72

Note: 3.50-4.00 (Very Great); 2.50-3.49 (Great); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Level of Financial Performance of Small-scale Greengrocers in Terms of Sales*

Table 11 shows the level of financial performance of small-scale greengrocers in terms of sales. The results showed that the level of financial performance of small-scale greengrocers in terms of sales with (*M* = 2.60, *SD* = 0.55) is perceived as *high*, which means that the sales increase over the past six months, with occasional periods of decline. The findings indicate a moderate consensus among greengrocers regarding the level of financial performance on their sales. The moderate standard deviation suggests that the responses are *consistent* across the sample. Specifically, most data points deviated from the mean by approximately 0.55 units, reflecting a moderate level of variability within the data set.

The detailed results further show that both gross sales *(M* = 2.67, *SD* = 0.62*)* and net sales *(M* = 2.53, *SD* = 0.61*)* are *high*, reinforcing the overall positive trend in sales performance among small-scale greengrocers. The values indicate that the small-scale

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greengrocers experience a *high* level of financial performance within the past six months but with occasional dips. The *high* level of financial performance could mean that the small-scale greengrocers were able to employ good and competitive pricing strategies that can provide them with a *high* level of sales. Meanwhile, the occasional dips in their sales may have been caused by seasonal demands, especially that demands for some fruits or vegetables can also vary depending on seasons.

The generally *high* level of sales performance in terms of gross sales may also indicate growing sales volumes and successful pricing strategies, while *high* level net sales may reflect effective promotional efforts used to attract customers. However, the mention of occasional declines highlights the possible need for these businesses to remain vigilant and responsive to potential challenges, such as market fluctuations or increased competition. Consistently monitoring sales trends and being proactive in addressing periods of decline might be important for maintaining and improving financial performance in the future.

The result of having *high* level of gross sales that might be contributed by growing sales volume and effective pricing methods aligns with the previous study of Kienzler and Kowalkowski (2017) and Schneider et al. (2021), which highlights that greater sales volume enhances market share and competitiveness, while effective pricing strategies, such as significant price reductions, can drive consumer demand, all contributing to strong sales performance increasing gross sales.

Moreover, a high level of net sales suggests that greengrocers may be effectively managing sales returns, allowances, and discounts, which are key factors in maintaining strong revenue figures. In line with that, this high net sales performance may also stem from well-executed promotional strategies, such as discounting, aimed at attracting customers, aligning with the findings of Sumanion et al. (2023), who noted that sales discounts positively impact customer behavior by enhancing purchase intention, increasing transaction volume, and fostering loyalty, ultimately driving higher sales and profitability. Overall, the findings suggest a generally positive outlook for small-scale greengrocers, but also emphasize the importance of continuous improvement and adaptability in their sales strategies.

Table 11 Level of Financial Performance of Small-Scale Greengrocers in Terms of Sales

Item	M	Interpretation	SD
Overall	**2.60**	**High (H)**	**0.55**
1. Gross Sales	2.67	High (H)	0.62
2. Net Sales	2.53	High (H)	0.61

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Level of Financial Performance of Small-scale Greengrocers in Terms of Cost*

Table 12a shows the level of financial performance of small-scale greengrocers in terms of cost. The results showed that the level of financial performance of small-scale greengrocers in terms of cost with $M = 2.59$, $SD = 0.73$ is perceived as *high*, which means that the cost decreased over the past six months, with occasional periods of increase. It also suggests a moderate consensus among greengrocers regarding the level of financial performance, particularly in relation to their cost. The low standard deviation indicates that the responses are *consistent* across the sample. Specifically, most data points deviated from the mean by approximately 0.73 units, reflecting a consistent level of variability within the data set.

However, the result shows that Labor Cost ($SD = 1.06$), Electricity and Water Expenses ($SD = 1.13$), Transportation and Delivery Cost ($SD = 1.01$), and Rent Expense ($SD = 1.24$) show moderately consistent responses, indicating a slightly weak consensus among small-scale greengrocers. The variability may stem from differences in business size, location, or operational needs. This weak consensus suggests that the impact of these costs is not uniformly experienced, suggests that different greengrocers across the sample feel these burdens differently when it comes to addressing these financial pressures.

The results in Table 12a reveal that the overall financial performance of small-scale greengrocers in terms of cost management falls within the *high* range ($M = 2.59$, $SD = 0.73$), indicating that the small-scale greengrocers were able to control their costs and expenses to achieve a *high* financial performance. However, there remains significant room for improvement. This suggests that although greengrocers have managed to reduce costs to some extent over the past six months, their cost management practices are not yet optimized to maximize profitability.

The results showed the labor cost as the item that small-scale greengrocers had the least cost and expense with a mean average (M) of 3.08 and standard deviation (SD) of 1.06, indicating that a *low* labor cost is one of the contributors to the *high* level of financial performance of the small-scale greengrocers. This suggests that, perhaps, the majority of small-scale greengrocers operate their businesses on their own without the help of workers. This specific situation may also show that operating their business alone without the recruitment of workers (i.e. storekeeper) decreases their costs and expenses, especially in the labor cost, which can also lead to a low costs and expenses and high financial performance.

Further, the cost items with the lowest effect to the level of financial performance of small-scale greengrocers are *inventory and supplies* ($M = 2.27$, $SD = 0.79$) and *rent expense* ($M = 2.27$, $SD = 1.24$), with both were interpreted as *low*, indicating that they are the items with high costs and expenses for the small-scale greengrocers, suggesting that they have low effect or contribution to

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the level of financial performance. In terms of *inventory and supplies*, the results suggest that the small-scale greengrocers may have been overstocking their products, indicating poor and inefficient inventory practices, which leads to wastes and losses especially that fruits and vegetables are highly perishable goods.

Additionally, the *low* level of financial performance with regards to rent expense indicates that rent expense is an item with high costs and expense that the small-scale greengrocers are paying for. Rent expense is also a fixed cost that they have to pay for regardless of how much sales they have made. The results also showed that rent expense has a *high* standard deviation (*SD*) of 1.24, suggesting that small-scale greengrocers have differences in the amount of rent expense that they are paying for. The differences in their rent expense could mean that rent expenses vary depending on the size and accessibility of their areas within the public market.

The implication of these findings highlights that small-scale greengrocer face challenges particularly with inventory, supplies, and rent expense, which may be limiting their overall financial efficiency. Managing these high-cost areas more effectively could significantly improve their financial standing. Additionally, the variability in cost management across other categories suggests that some greengrocers may benefit from targeted support or training in cost control strategies.

The findings align with the previous study by Miller (2019), which emphasized that inventory costs are a significant business expense that can escalate if not properly controlled, increasing the overall cost of the business.

Additionally, Setyawati et al. (2023) highlighted that fixed costs, such as rent, remain unchanged regardless of operational activity within a given period, and any rise in these fixed expenses can substantially increase overall operating costs, thereby negatively impacting a company's financial performance in terms of cost management. Overall, the study's findings underscore the need for small-scale greengrocers to focus on cost optimization, especially in inventory and rent, to enhance their financial performance and sustainability in the competitive market.

Table 12a Level of Financial Performance of Small-Scale Greengrocers in Terms of Cost

Item	M	Interpretation	SD
Overall	**2.59**	**High (H)**	**0.73**
1. Inventory and Supplies	2.27	Low (L)	0.79
2. Labor Cost	3.08	High (H)	1.06
3. Electricity and Water Expenses	2.60	High (H)	1.13
4. Transportation and Delivery Cost	2.73	High (H)	1.01
5. Rent Expense	2.27	Low (L)	1.24

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Level of Cost of Small-Scale Greengrocers*

Table 12b presents the cost levels reported by small-scale greengrocers. The findings indicate that the average cost level is considered *low* (*M* = 2.46, *SD* = 0.77), suggesting that costs have generally risen over the past six months, though there were occasional declines. The data also reflect a moderate level of agreement among greengrocers about their financial performance, particularly concerning costs. The standard deviation of 0.77 points to *consistent* responses, with most values falling within this range from the mean, reflecting a consistent level of variability within the data set.

However, the findings reveal that responses related to Labor Cost (*SD* = 1.11), Electricity and Water Expenses (*SD* = 1.13), Transportation and Delivery Cost (*SD* = 1.03), and Rent Expense (*SD* = 1.23) display only moderate consistency, pointing to a relatively weak agreement among small-scale greengrocers. This variation suggests that the financial impact of these expenses is not uniformly perceived across the sector. Differences in business characteristics such as size, location, and operational requirements likely contribute to this inconsistency, suggesting that the burden of these costs is experienced differently.

The results in Table 12b show that the overall costs for small-scale greengrocers are relatively *low* (*M* = 2.46, *SD* = 0.77). This suggests that these businesses may be struggling to manage their expenses effectively, highlighting the need for targeted strategies to improve cost control. It also indicates that greengrocers have not been successful in reducing costs over the past six months, and their current cost management practices may require improvement to enhance profitability.

The findings revealed that *labor cost* was the lowest cost for small-scale greengrocers, with a mean score (*M*) of 1.98 and a standard deviation (*SD*) of 1.11. This indicates that low labor costs likely contribute to the strong financial performance of these businesses. It implies that many small-scale greengrocers may run their operations independently, without hiring additional staff. This setup—managing the business without employees such as storekeepers—may help reduce labor expenses, which in turn contributes to overall lower costs and improved financial outcomes.

Moreover, the items with the highest cost levels for small-scale greengrocers are *inventory and supplies* (*M* = 2.79, *SD* = 0.80) and *rent expense* (*M* = 2.78, *SD* = 1.23), both rated as high. This indicates that these two items represent significant costs for the

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greengrocers and may contribute less positively to their financial performance. The high inventory and supply costs suggest possible overstocking, pointing to ineffective inventory management. This is particularly problematic since fruits and vegetables are highly perishable, which can result in increased waste and financial losses.

In addition, the high rent expenses reflect a substantial fixed cost that greengrocers must pay regardless of sales performance. The high standard deviation for rent (*SD* = 1.23) also indicates considerable variation in rent amounts among greengrocers, likely due to differences in stall size and location within the public market, which influence rental rates.

These findings imply that small-scale greengrocers encounter significant challenges related to inventory, supplies, and rent expenses, which may be hindering their overall financial efficiency. Improving the management of these high-cost areas could lead to better financial outcomes. Furthermore, the observed differences in how costs are managed across various categories suggest that certain greengrocers could benefit from focused guidance or training in effective cost control practices.

The results are consistent with Miller's (2019) study, which pointed out that inventory costs are a major business expense that can increase significantly if not effectively managed, thereby raising overall business costs. Similarly, Setyawati et al. (2023) emphasized that fixed expenses like rent remain constant regardless of business activity levels, and any increase in these costs can substantially raise total operating expenses, negatively affecting a business's cost efficiency. Taken together, these findings highlight the importance for small-scale greengrocers to prioritize cost optimization, particularly in inventory and rent, to improve their financial performance and remain competitive in the market.

Table 12b Level of Cost of Small-scale Greengrocers

Item	M	Interpretation	SD
Overall	**2.46**	**Low (L)**	**0.77**
1. Inventory and Supplies	2.79	High (H)	0.80
2. Labor Cost	1.98	Low (L)	1.11
3. Electricity and Water Expenses	2.44	Low (L)	1.13
4. Transportation and Delivery Cost	2.30	Low (L)	1.03
5. Rent Expense	2.78	High (H)	1.23

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

- *Level of Financial Performance of Small-scale Greengrocers in Terms of Profit*

Table 13 shows the level of financial performance of small-scale greengrocers in terms of profit. The results showed that the level of financial performance of small-scale greengrocers in terms of profit with (*M* = 2.48, *SD* = 0.54) is perceived as *low*, indicating that *profit declined over the past six months, with occasional periods of growth*, which means that somewhat profitable over the past six months, but its profit margin is very thin and not sustainable. The findings suggest a relatively *low* consensus among greengrocers regarding the level of financial performance in relation to their profit. The moderate standard deviation indicates that the responses are consistent across the sample. Specifically, most data points deviated from the mean by approximately 0.54 units, reflecting a moderate level of variability within the dataset.

The overall financial performance of small-scale greengrocers in terms of profit is rated as *low*, with a mean score (*M*) of 2.48 and a *moderate* standard deviation (*SD*) of 0.54. This indicates that while these greengrocers are generating some profit, the profitability is generally limited and may not be sufficient to sustain long-term business growth. The moderate variability in responses suggests that most greengrocers experience similar challenges with profitability, although there is some difference in individual financial outcomes.

Looking at specific items, gross profit received a slightly higher mean score (*M*) of 2.54, which is interpreted as *high*. This suggests that greengrocers are able to generate a reasonable margin between sales and the cost of goods sold. However, the net profit scored *lower* mean (*M*) at 2.42, indicating that after accounting for all expenses, the actual take-home profit is *low*. This gap between gross and net profit highlights that operating costs such as labor, transportation, rent expenses, inventory and supplies, and other overheads might significantly reduce overall profitability.

The findings imply that despite managing to sell products at a margin above cost, small-scale greengrocers face financial pressures from high expenses that erode their net earnings. This situation points to the need for improved cost management and operational efficiency to enhance net profitability. Without addressing these challenges, the sustainability of their businesses may be at risk, as thin profit margins limit their ability to reinvest, expand, or absorb unexpected costs. Overall, the low level of financial performance in profit underscores the financial constraints small-scale greengrocers face in maintaining a viable and competitive operation.

The findings align with Suhardjono (2006), as cited in Mahdi and Khaddafi (2020), who explain that the Net Profit Margin (NPM) reflects the efficiency with which a business converts total sales into net profit after accounting for all costs and expenses,

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where a low NPM signals weakened profitability.

In addition, Kalash and Bilen (2021) assert that increased sales can counterbalance rising fixed costs, lower costs and expenses and boosting overall profitability through the benefits of operating leverage. However, this view only partially aligns with the findings of the current study, which suggest that while sales levels may be high, they may not be totally sufficient to fully absorb escalating costs. As a result, profitability remains constrained, indicating that strong sales alone may not guarantee improved financial outcomes without effective cost control.

Table 13 Level of Financial Performance of Small-Scale Greengrocers in Terms of Profit

Item	M	Interpretation	SD
Overall	**2.48**	**Low (L)**	**0.54**
1. Gross Profit	2.54	High (H)	0.57
2. Net Profit	2.42	Low (L)	0.58

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Summary of the Level of Financial Performance of Small-Scale Greengrocers*

Table 14 shows the summary of the level of financial performance of small-scale greengrocers. The financial performance is perceived as high on sales (M = 2.60, SD = 0.55) and cost (M = 2.59, SD = 0.73). While on profit (M = 2.48, SD = 0.54), it is perceived as low among small-scale greengrocers.

The overall results for the summary of the level of financial performance is high with sales and costs perceived as high, and profit perceived as low. Among the indicators, sales (M = 2.60, SD = 0.55) got the highest mean score followed by cost (M = 2.59, SD = 0.73). While on profit (M = 2.48, SD = 0.54) got the lowest mean score.

The result shows that the business is performing moderately well. This perceives that the financial performance of the small-scale greengrocers in terms of sales is high. The business experienced a significant increase in sales with occasional periods of decline. Gross sales and net sales items show a high result, indicating an increase in the past six months. This suggests a positive growth in their sales over the last six months despite some fluctuations.

In terms of financial performance related to costs, there has been a general decrease in cost over the past six months, although there were occasional periods of increase. Items such as inventory and supplies, and rent expense have a low result, indicating an increase in expense, this highlighted the challenges faced by the small-scale greengrocers that limits their overall financial efficiency. In contrast, items such as labor cost, water expense, and transportation and delivery cost have a high result, indicating a well-managed cost. Overall, there is a need for small-scale greengrocers to focus on cost optimization in order to further improve their financial performance.

Profit shows a low rating, indicating inconsistency in the profitability over the past six months. This indicates that despite earning a profit, it is generally limited and may not be sufficient enough for the business to sustain their long-term growth. Gross profit item showed a high result, indicating that the business has a high profit after deducting the cost of goods sold. Meanwhile the net profit has a low result, this indicates that the profitability of the small-scale greengrocers is facing constraints in terms of their cost and expense management that can possibly affect their capacity to grow and expand.

Moreover, while the small-scale greengrocers are able to generate high sales, these gains are largely offset by equally high costs, resulting in low profitability. This suggests that although the businesses are operationally active and generating revenue, the high expenses involved in running the business significantly reduce the net profit. The observation of strong financial performance in terms of high sales and controlled costs, yet accompanied by low profitability, may be attributed to several underlying factors. These can include operational inefficiencies that reduce overall efficiency, hidden or unexpected expenses that are not immediately apparent in financial reports, and aggressive pricing strategies aimed at staying competitive in the market, which may reduce profit margins despite high revenue.

The findings reinforce the conclusions of Mukayivara and Rusibana (2024), who highlighted the intricate relationship between cost structures and financial performance, emphasizing that as costs continue to rise while revenue growth lags behind, this widening gap places significant pressure on a firm's profitability, ultimately diminishing its overall financial performance. This underscores the critical need for enhanced cost management practices, as the low financial performance appears to stem not from insufficient sales, which may, in fact, be high, but from rising operational costs that erode profitability, ultimately leading to diminished overall gains.

In addition, a study from Arief et al. (2023) stands in contrast with the finding as it indicates that a company's successful marketing and sales strategies are reflected in a higher sales growth rate, consequently leading to increased profits and financial stability, which can prevent financial distress. Similarly, recent studies also contradict the findings as strategically reducing costs

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plays a crucial role in maximizing profits, as lower costs generally lead to higher overall profitability (De Abreu & Rosslyn-Smith, 2021; Nwanyanwu et al., 2023).

Table 14 Summary of Level of Financial Performance of Small-Scale Greengrocers

Item	M	Interpretation	SD
Overall	**2.57**	**High (H)**	**0.39**
Sales	2.60	High (H)	0.55
Cost	2.59	High (H)	0.73
Profit	2.48	Low (L)	0.54

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Level of Financial Performance when Grouped According to Nature of Products*

Table 15 illustrates the level of financial performance of small-scale greengrocers when grouped according to the nature of products being sold.

The financial performance in terms of sales has increased over the past six months, with occasional periods of decline across different categories according to the nature of products being sold. The results for small-scale greengrocers who sell vegetables (*M* = 2.62, *SD* = 0.54) were interpreted as *high*. Conversely, the findings for those small-scale greengrocers who sell fruits (*M* = 2.56, *SD* = 0.60) showed a slightly lower mean, yet it was still reported as *high*. The similarity in results implies that financial performance in terms of sales has little impact on their sales performance, as both groups achieve similarly *high* results, regardless of the nature of products being sold by small-scale greengrocers.

In terms of cost, the financial performance has decreased over the past six months, with occasional periods of increase across different categories according to the nature of products being sold. The results for small-scale greengrocers who sell vegetables (*M* = 2.50, *SD* = 0.75) was reported as *high*. Similarly, the findings for those small-scale greengrocers who sell fruits (*M* = 2.83, *SD* = 0.61) showed a slightly higher mean, yet it was still interpreted as *high*. The similarity in outcomes suggests that financial performance in terms of cost has little impact on their cost performance, as both groups achieve similarly *high* results, regardless of the nature of products being sold by small-scale greengrocers.

The financial performance in terms of profit has been somewhat profitable over the past six months, but its profit margin is very thin and not sustainable across different categories according to the nature of products being sold. The results for small-scale greengrocers who sell vegetables (*M* = 2.48, *SD* = 0.55) was reported as *low*. Conversely, the findings for those small-scale greengrocers who sell fruits (*M* = 2.46, *SD* = 0.51) showed a slightly lower mean, yet it was still interpreted as *low*. The similarity in outcomes, reflected by consistently low financial performance in terms of profit for both groups regardless of the nature of products sold by small-scale greengrocers, highlights a crucial area for development and suggests that nature of product sold exerts minimal influence on overall profitability.

The findings revealed that when small-scale greengrocers were grouped according to the nature of product being sold, the overall level of financial performance for those selling vegetables (*M* = 2.52, *SD* = 0.42) and for those selling fruits (*M* = 2.69, *SD* = 0.28) both resulted in *high* ratings. The relatively low standard deviations for vegetables (*SD* = 0.42) and for fruits (*SD* = 0.28) suggest a high degree of consistency in the financial performance across samples.

The minimal differences observed across all indicators imply that small-scale greengrocers, irrespective of whether they sell fruits or vegetables, experience similar financial performance patterns. This suggests that general financial management practices may be equally applicable across product types, and that the nature of the products sold exerts minimal influence on sales, cost, and profit outcomes.

Moreover, the consistently low profitability highlights a crucial area for development, indicating a need for further intervention to improve the financial sustainability of small-scale greengrocers, regardless of the specific products they offer. These findings underscore the importance of focusing on broader operational and financial strategies rather than product-specific approaches to enhance overall financial performance.

Additionally, addressing factors such as cost control, pricing strategies, and market positioning may prove more effective in driving profitability improvements. Strengthening financial literacy and providing access to resources or training could also empower greengrocers to optimize their operations and better navigate market challenges.

While both small-scale greengrocers selling fruits and those selling vegetables demonstrate substantial financial performance, those selling vegetables tend to exhibit slightly better outcomes in sales and profit, as reflected by marginally higher mean scores. However, despite these differences, both groups report similarly low profit margins, indicating that profitability challenges persist regardless of product's nature.

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Yogesh and Ravidran (2023) explain that the perishable nature of fruits and vegetables often forces retailers to reduce prices as freshness declines, negatively impacting profit margins, a dynamic that likely affects both groups equally. Moreover, Li et al. (2024) underscore how perishability directly influences financial performance, reinforcing the idea that product-specific factors are critical yet do not fully account for the uniformly low profitability observed.

The findings suggest that while financial management practices may be slightly more effective among fruits sellers, both groups face similar profitability constraints. This uniformity suggests that general financial strategies are widely applied across various product categories.

However, this stands in contrasts with studies like Boufous et al. (2023), which emphasize the significant impact of product natural characteristics such as shelf life and environmental sensitivity on operational efficiency and profitability, indicating that these product-specific dynamics is essential for small-scale greengrocers aiming to enhance financial performance and maintain their market position.

Table 15 Level of Financial Performance when Grouped According to Nature of Products

	Vegetables			**Fruits**		
Indicators	**M**	**Interpretation**	**SD**	**M**	**Interpretation**	**SD**
Overall	**2.52**	**High (H)**	**0.42**	**2.69**	**High (H)**	**0.28**
Sales	2.62	High (H)	0.54	2.56	High (H)	0.60
Cost	2.50	High (H)	0.75	2.83	High (H)	0.61
Profit	2.48	Low (L)	0.55	2.46	Low (L)	0.51

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Level of Financial Performance when Grouped According to Capitalization*

Table 16 illustrates the level of financial performance of small-scale greengrocers when grouped according to the capitalization.

The financial performance in terms of sales has increased over the past six months, with occasional periods of decline across different categories according to the capitalization. The results for small-scale greengrocers with capitalization of ₱10,000 and below (*M* = 2.52, *SD* = 0.52) were reported as *high*. Conversely, the findings for those small-scale greengrocers with capitalization of above ₱10,000 (*M* = 2.69, *SD* = 0.59) showed a slightly higher mean, yet it was still interpreted as *high*. The similarity in results implies that financial performance in terms of sales has little impact on their sales performance, as both groups achieve similarly high results, regardless of the capitalization by small-scale greengrocers.

The financial performance in terms of cost has decreased over the past six months, with occasional periods of increase across different categories according to the capitalization. The results for small-scale greengrocers with capitalization of ₱10,000 and below (*M* = 2.63, *SD* = 0.71) were reported as *high*. Similarly, the findings for those small-scale greengrocers with capitalization of above ₱10,000 (*M* = 2.54, *SD* = 0.74) showed a slightly lower mean, yet it was still interpreted as *high*. The similarity in outcomes suggests that financial performance in terms of cost has little effect on their cost performance, as both groups achieve similarly high results, regardless of the capitalization by small-scale greengrocers.

The financial performance in terms of profit varied slightly across different categories according to the capitalization. It is somewhat profitable over the past six months, but its profit margin is very thin and not sustainable for small-scale greengrocers with capitalization of ₱10,000 and below (*M* = 2.42, *SD* = 0.56), as the result was reported as *low*. However, it is profitable over the past six months, with a strong profit margin and efficient operations for small-scale greengrocers with capitalization of above ₱10,000 (*M* = 2.53, *SD* = 0.52), as the findings showed a slightly higher mean (*M*) and reported as *high*. The results indicate that small-scale greengrocers with low levels of capital experience consistently low and unsustainable profit margins, highlighting a critical area for improvement and the need for targeted intervention. Conversely, those with higher levels of capital demonstrate greater profitability and operational efficiency, although further enhancements may be necessary to sustain and boost their financial performance.

The results indicated that, when categorized by capitalization, small-scale greengrocers with both lower (*M* = 2.63) and higher (*M* = 2.51) levels of capital demonstrated a similar *high* overall level of financial performance. The relatively low standard deviations observed in both the lower capitalization (*SD* = 0.45) and the higher capitalization (*SD* = 0.32) point to a very consistent financial performance within each sample.

These results suggest that while general sales and cost management practices may be effectively applied regardless of capitalization, profitability is more sensitive to available capital. The consistently low profit margins among those with limited capital highlight a critical area for improvement and suggest a need for targeted interventions to enhance financial sustainability for this group. Limited capitalization may restrict the ability of small-scale greengrocers to invest in essential resources, optimize operations, or absorb market fluctuations, thereby impacting their profit margins.

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Conversely, greengrocers with higher capital appear better positioned to maintain stronger profit margins and operational efficiency, although there remains room for further improvement. Overall, the findings imply that, aside from profitability, capitalization does not significantly alter the financial performance patterns of small-scale greengrocers. This suggests that while sales and cost management are relatively stable across different capital levels, focused support in financial planning and access to capital could be crucial for improving profitability. Additionally, broader strategies that combine financial support with capacity-building initiatives may be necessary to address persistent challenges in profit generation and ensure the long-term viability of small-scale greengrocers.

Although both groups of small-scale enterprises engage in substantial financial management practices, those with greater capitalization generally show better financial results. The findings indicate that firms with greater capital bases achieve higher levels of financial performance in terms of profit, as highlighted by Addo (2017, as cited in Cammayo & Cammayo, 2020), who found a direct link between increased capitalization and improved financial results. This observation is reinforced by Winarsih et al. (2021), who reported that greater capitalization correlates with enhanced profit outcomes, including the ability to meet customer demands and boost productivity.

Despite these differences, the studies collectively suggest that financial management practices are widely adopted among greengrocers regardless of the capitalization, with the same level of performance, indicating that capitalization may only marginally be relevant in determining the level of financial success. While those with higher capitalization have a notable advantage in profitability and operational efficiency, the research by Irfan and Ali (2017, as cited in Kusuma et al., 2021) emphasizing the positive impact of capitalization on sales growth, partially contrast the result of this study, as it indicates that greengrocers have the same level of financial performance in terms of sales and cost, regardless of their capitalization. The high overall financial performance observed across both capital categories suggests a broadly consistent and balanced distribution, regardless of capitalization level.

This general pattern does not totally align with the study of Hastuti et al. (2019) and Addo (2017, as cited in Cammayo & Cammayo, 2020), stating that greater business capitalization significantly enhances financial performance, highlighting the critical role of adequate capital in enabling small businesses to achieve profitability and maintain financial stability.

Table 16 Level of Financial Performance when Grouped According to Capitalization

	₱10,000 and Below			**Above ₱10,000**		
Indicators	**M**	**Interpretation**	**SD**	**M**	**Interpretation**	**SD**
Overall	**2.63**	**High (H)**	**0.45**	**2.51**	**High (H)**	**0.32**
Sales	2.52	High (H)	0.52	2.69	High (H)	0.59
Cost	2.63	High (H)	0.71	2.54	High (H)	0.74
Profit	2.42	Low (L)	0.56	2.53	High (H)	0.52

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Level of Financial Performance when Grouped According to Years of Business Operation*

Table 17 illustrates the financial performance of small-scale greengrocers when grouped according to the years of business operation.

The financial performance in terms of sales has increased over the past six months, with occasional periods of decline across different categories according to the years of business operation. The results for small-scale greengrocers with 16 years and below of business operation (M = 2.68, SD = 0.59) was reported as *high*. Similarly, the findings for those small-scale greengrocers with above 16 years of business operation (M = 2.51, SD = 0.51) showed a slightly lower mean, yet it was still interpreted as *high*. The similarity in results implies that financial performance in terms of sales has little impact on their sales performance, as both groups achieve similarly *high* results, regardless of the years of business operation by small-scale greengrocers.

In terms of cost, the financial performance has decreased over the past six months, with occasional periods of increase across different categories according to the years of business operation. The results for small-scale greengrocers with 16 years and below of business operation (M = 2.66, SD = 0.73) was interpreted as *high*. Conversely, the findings for those small-scale greengrocers with above 16 years of business operation (M = 2.51, SD = 0.72) showed a slightly lower mean, yet it still reported as *high*. The similarity in outcomes suggests that financial performance in terms of cost has little impact on their cost performance, as both groups achieve similarly *high* results, regardless of the years of business operation by small-scale greengrocers.

The financial performance in terms of profit has been somewhat profitable over the past six months, but its profit margin is very thin and not sustainable across different categories according to the years of business operation. The results for small-scale greengrocers with 16 years and below of business operation (M = 2.47, SD = 0.55) were reported as *low*.

Conversely, the findings for those small-scale greengrocers with above 16 years of business operation (M = 2.49, SD = 0.53) showed a slightly higher mean, yet it was still interpreted as *low*. The similarity in outcomes, reflected by consistently low financial performance in terms of profit for both groups regardless of the years of business operation among small-scale greengrocers,

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emphasizes a critical area needing further development and indicates that the years of business operation have little bearing on profitability outcomes.

The findings showed that, when small-scale greengrocers were categorized based on their years of business operation, both those with fewer years (M = 2.62) and those with more years (M = 2.51) exhibited a *high* overall level of financial performance. The relatively *low* standard deviations (*SD*) for both groups, 0.45 for those with fewer years and 0.32 for those with more years, indicate a *very consistent* effective financial performance across the sample, regardless of business tenure.

The minimal differences observed across all indicators suggest that, despite differences in experience brought by years of business operation, small-scale greengrocers face similar financial challenges and may benefit from broader interventions focused on improving profitability rather than relying solely on years of operation. This suggests that longevity in business does not necessarily translate to better financial outcomes, particularly in terms of profit margins. Both newer and more established greengrocers appear to employ comparable sales and cost management practices, resulting in similar performance levels across these indicators. The consistently low profitability reported by both groups highlights a persistent issue that requires targeted attention.

With this, efforts to enhance financial sustainability should prioritize comprehensive strategies such as improving pricing, cost control, and operational efficiency. Additionally, providing training and resources that support effective financial planning could help greengrocers overcome these challenges regardless of their years in business. Overall, these results emphasize the importance of adopting general financial management strategies that are applicable across different stages of business operation, minimizing the need for tenure-specific approaches.

The study reflects the same findings as Ghimire (2015) and Handrimurtjahyo (2014, as cited in Puspaningrum, 2019) noting that older businesses might achieve marginal improvements in profit due to learned efficiency. However, research on spoilage management emphasizes that effective procurement, storage, and transportation practices are more critical to financial performance than business age alone (Buhion et al., 2024; John & Singh, 2025). These operational factors may directly influence sales and cost efficiency by minimizing food waste, regardless of how long a business has been operating.

Akben-Selcuk (2016) supports this by finding that older firms do not always enjoy significantly higher profits, as operational efficiency and market conditions often play a more decisive role. Despite the slight profit advantage for older businesses shown in Table 17, the findings suggest that financial performance may be more heavily influenced by factors like operational management and market conditions rather than solely by the number of years in operation.

The overall financial performance is seen as high in both older and newer businesses, suggesting that level of financial performance is equally and substantially distributed regardless of years of business operation. This finding differs somewhat from Rwakihembo et al. (2023), who argue that long-established firms tend to perform better financially due to their greater market experience and competitive advantage. Likewise, it somewhat contrasts with the findings of Khamis et al. (2018, as cited in Suminah et al., 2022), stating that longevity in business is strongly associated with greater financial stability.

Table 17 Level of Financial Performance when Grouped According to Years of Business Operation

	16 Years and Below			**Above 16 Years**		
Indicators	**M**	**Interpretation**	**SD**	**M**	**Interpretation**	**SD**
Overall	**2.62**	**High (H)**	**0.45**	**2.51**	**High (H)**	**0.32**
Sales	2.68	High (H)	0.59	2.51	High (H)	0.51
Cost	2.66	High (H)	0.73	2.51	High (H)	0.72
Profit	2.47	Low (L)	0.55	2.49	Low (L)	0.53

Note: 3.50-4.00 (Very High); 2.50-3.49 (High); 1.50-2.49 (Low); 1-1.49 (Very Low)

➢ *Difference in the Extent of Spoilage Management Practices According to Business Profiles*

Table 18 shows the difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their nature of product, capitalization, and years of business operation.

For the significant difference in terms of nature of product, the results revealed no significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their nature of product (t = 0.092; p = 0.927). This indicates that the null hypothesis stating that there is no significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their nature of product is not rejected.

For the difference in terms of capitalization, the results revealed no significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their capitalization (t = 0.575; p = 0.567), indicating that the null hypothesis stating that there is no significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their capitalization is not rejected.

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For the difference in terms of years of business operation, the results revealed no significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their years of business operation *(t*=0.954*; p*=0.343*)*. This indicates that the null hypothesis stating that there is no significant difference in the extent of spoilage management practices of small-scale greengrocers when grouped according to their years of business operation is not rejected.

The p-values for all three comparisons (.927, .567, and .343) are greater than the conventional significance level of .05. This indicates that there are no statistically significant differences in the overall extent of spoilage management practices between the groups based on Nature of Product (Fruits or Vegetables), Capitalization (₱10,000 and below and Above ₱10,000), and Years of Business Operation (16 years and below and above 16 years). The results imply that the small-scale greengrocers employ the same spoilage management practices regardless of the products that they sell, the capital that they used in starting their business, and how long they have been in operation.

The study's findings suggest that the overall extent of spoilage management practices employed by small-scale greengrocers does not significantly vary based on their business profiles. It implies that their extent of spoilage management practices does not vary depending on the business profiles, indicating that small-scale greengrocers generally practice the same spoilage management practices at similar extents regardless of the differences in their product, capital, and years of business operation, indicating that these practices are not influenced or dependent on the profile variables. Furthermore, the results also demonstrate that the small-scale greengrocers share similar knowledge when it comes to these practices. This instance might be due to their lack of access to training or seminars regarding this topic or their limited access to more advanced technologies that can help in enhancing their spoilage management practices and support them in practicing these strategies to a great extent.

The research study by Sonwani et al. (2022) highlighted that an artificial intelligence approach is a good spoilage management practice that can slow down the spoiling of the products. The study of Sonwani et al. (2022) supports the findings of this study, indicating that small-scale greengrocers rely on the same and similar practices due to their lack of knowledge and access to technological advancements that can help their cause, in which is not concerned by how long the they have been in operation.

Additionally, experienced vendors tend to adopt efficient waste management practices (Peng et al., 2022). The results of this study, contradicts the study of Peng et al. (2022) as small-scale greengrocers with more or less experience still use the same spoilage management practices. Furthermore, the findings of the study also contradicted the research study of García et al. (1995, as cited in Sillué et al., 2023) stating that fruits are more affected and prone to spoilage if handling and storage is improper, this negates the findings that whether it is fruits or vegetables, the small-scale greengrocers still apply the same spoilage management practices. With this, the study implies that small-scale greengrocers rely on the same and similar practices due to their lack of knowledge about the biological nature and characteristics of products.

Despite the slight variations in results across the two capitalization categories, the findings indicate that spoilage management practices are equally and substantially implemented to minimize waste and spoilage, regardless of the greengrocers' level of capitalization. The absence of significant differences suggests a uniform application of these practices across capitalization groups. This consistency stands in contrast to previous studies, which advocate for differentiated, capitalization-specific strategies to address spoilage more effectively, suggesting that financial factors play a major role in effectively managing spoilages, emphasizing the need for a greater capitalization (Abitria, 2024; Handayati & Widyanata, 2024).

Table 18 T-test Results for the Difference in the Extent of Spoilage Management Practices when Grouped According to Business Profiles

Variable	n	M	SD	t	df	p
Nature of Products						
Vegetables	65	3.101	.373	.092	87	.927
Fruits	24	3.093	.385			
Capitalization						
₱10,000 and below	46	3.121	.353	.575	87	.567
Above ₱10,000	43	3.075	.399			
Years of Business Operation						
16 years and below	46	3.14	.357	.954	87	.343
Above 16 years	43	3.059	.393			

➢ *Difference in the Level of Financial Performance when Grouped According to Business Profiles*

Table 19 shows the difference in the level of financial performance of small-scale greengrocers when grouped according to their nature of product, capitalization, and years of business operation.

The difference in terms of nature of product, the results revealed a significant difference in the level of financial performance of small-scale greengrocers when grouped according to their nature of product (*U-Ratio*= 549.500; *p* = 0.032). Therefore, the null

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hypothesis stating that there is no significant difference in the level of financial performance of small-scale greengrocers when grouped according to their nature of product is rejected.

The difference in capitalization, the results revealed no significant difference in the level of financial performance of small-scale greengrocers when grouped according to their capitalization (*U-Ratio* = 965.000; p = 0.843). Therefore, the null hypothesis stating that there is no significant difference in the level of financial performance of small-scale greengrocers when grouped according to their capitalization is not rejected.

The difference in terms of years of business operation, the results revealed no significant difference in the level of financial performance of small-scale greengrocers when grouped according to their years of business operation (U = 822.500; p = 0.169). Therefore, the null hypothesis stating that there is no significant difference in the level of financial performance of small-scale greengrocers when grouped according to their years of business operation is not rejected.

The *Mann-Whitney U* test result reveals that there is no significant difference in the level of financial performance of the small-scale greengrocers when grouped according to their years of business operation and capitalization, indicating that the financial performance of the small-scale greengrocers does not significantly vary regardless of their years of business operation (16 years and below or above 16 years) and capitalization (P10,000 and below and above P10,000). This result suggests that the years of business operation and the amount of capitalization is unrelated to the financial performance of the small-scale greengrocers.

Further, in terms of the nature of the product, the results showed that the null hypothesis was rejected, indicating that there is a significant difference in the level of financial performance of the small-scale greengrocers when grouped according to their nature of product. This suggests that the level of financial performance of small-scale greengrocers significantly varies depending on the product being sold, whether it is vegetables or fruits.

The study's findings on the nature of product's effect on the level of financial performance of small-scale greengrocers indicate that their financial performance is influenced by the products that they are selling, whether it is fruits or vegetables. This may be due to the differences in the product demand, it could be that fruits are more in demand compared to vegetables, or vice versa. The demand of products may also vary depending on seasons.

Moreover, the spoilage duration of both products may also be a factor in the level of their performance, suggesting that products who spoil faster typically become waste and convert into losses, affecting their overall profitability that reflects on the level of their financial performance. Additionally, pricing strategies for both products may have varied that could have possibly affected the profitability of small-scale greengrocers, which also reflects on their level of financial performance.

In contrast, capitalization and years of business operation showed no significant difference results, indicating that these indicators are unrelated to the financial performance of the small-scale greengrocers. Capitalization does not significantly affect the financial performance of small-scale greengrocers, suggesting that even those with relatively smaller capital (P10,000 and below) can also perform as well as those with relatively higher capital (above P10,000).

Similarly, years of business operation also does not significantly affect the financial performance of small-scale greengrocers, indicating that newer businesses (16 years and below) can also effectively compete and be on par with businesses with longer operations (above 16 years), this shows that businesses with capital or longer experience do not have any advantage compared to the ones with lower capital and newer businesses in the market, indicating that no businesses within the public market are more established than the other. This shows that financial performance may be affected and influenced by other factors such as pricing strategies, product quality, and customer's choices and preferences.

The findings in the study are supported by the study of Boufous et al. (2023), in which it stated that fruits and vegetables significantly influence the financial performance of a business due to their characteristics. Further, the results were also validated as its implication is similar to the conducted study of Liu et al. (2018, as cited in Alsharafat et al., 2024) suggesting that the characteristics and nature of the product including their perishability, shelf life, and production cycles generally affect the financial performance of a business.

The findings of the study in terms of capitalization, on the other hand, contradicts the existing study of Rwakihembo et al. (2023) which stated that longer businesses tend to have better financial performance compared to newer businesses because more experience gives them an advantage. The research study of Khamis et al. (2018, as cited in Suminah et al., 2022) also provided the same implication that businesses that have been operating at long periods of time achieve higher financial stability. However, the findings in the same study of Khamis et al. (2018, as cited in Suminah et al., 2022), showed that years of business operation does not influence the level of financial performance of small-scale greengrocers. This may mean that having more experience is not a factor in achieving better financial performance, indicating that a business' financial performance is more likely influenced by other factors such as product quality and customer preferences.

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The study of Herman and Zsido (2023) was also contradicted by the findings of the study in terms of capitalization. Herman and Zsido (2023) stated in their study businesses with sufficient capitalization are more likely to attain favourable results when it comes to financial. Addo (2017, as cited in Cammayo and Cammayo, 2020) also stated that increased or higher capital tends to result in better financial outcome or stability for the business. However, in the case of the study of Addo (2017, as cited in Cammayo and Cammayo, 2020), capitalization does not influence the financial performance of the small-scale greengrocers. Similarly, to the years of business operation in the research of Khamis et al. (2018, as cited in Suminah et al., 2022), this circumstance might be because there are other factors that influence financial performance such as demands, quality, and preferences of the customer.

Table 19 Mann–Whitney U Test Result for the Difference in the Level of Financial Performance when Grouped According to Business Profiles

		n	Mean Ranks	Sum of Ranks	U-ratio	W	Z	p
Nature of Product	**Vegetables**	65	41.45	2694.50	549.500	2694.500	-2.142	.032
	Fruits	24	54.60	1310.50				
Capitalization	**₱10,000 and below**	46	44.48	2046.00	965.000	2046.000	-.198	.843
	Above ₱10,000	43	45.56	1959.00				
Years of Business Operation	**16 Years and Below**	46	48.62	2236.50	822.500	1768.500	-1.374	.169
	Above 16 Years	43	41.13	1768.50				

- *Relationship Between the Extent of Spoilage Management Practices and Level of Financial Performance of Small-Scale Greengrocers*

Table 20 shows the relationship between the extent of spoilage management practices and the level of financial performance of small-scale greengrocers. The result reveals a Spearman's Rho correlation coefficient (r_s) of -0.091 with a p-value (p) of 0.396. The correlation coefficient (r_s = -0.091) indicates a *very weak negative correlation* between the two variables. The p-value (p) 0.396 is greater than the standard level of significance 0.05. This implies that the result is not statistically significant and the null hypothesis should not be rejected. Moreover, the result indicates that there is no significant relationship between the extent of spoilage management practices and the level of financial performance of small-scale greengrocers.

The study's findings having no significant relationship between the extent of spoilage management practices and the level of financial performance suggests that, based on the data collected, variations in the degree to which they implement practices related to procurement, transportation, storage, handling, and disposal do not correspond systematically with variations in their financial outcomes in terms of sales, cost, and profit. The very weak negative correlation might suggest that the spoilage management practices currently employed by the small-scale greengrocers, while varying in extent, are not implemented consistently enough to create a desirable impact on overall financial performance within this specific sample. It might also suggest that other factors not measured or controlled for in this correlation, such as market demand fluctuations, competition, pricing strategies, or unforeseen external economic factors, have a much stronger influence on the financial performance of these small-scale greengrocers, potentially masking any subtle effects of spoilage management.

Several studies directly contradict the current findings. For instance, studies of Alegbeleye et al. (2022) and Buhion et al. (2024), have consistently reported that effective spoilage management practices like washing, drying, and innovative waste utilization can reduce losses and improve profitability for vendors.

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Similarly, global data from the Food and Agriculture Organization (FAO) emphasize the vast economic losses caused by spoilage, suggesting that improved management practices could lead to measurable financial benefits (Taichman, 2024; Herron et al., 2022). Other studies, such as Bayogan et al. (2023), further reinforce the idea that inadequate postharvest handling and storage practices are major contributors to financial loss in the fruit and vegetable sector, particularly in developing regions.

Nonetheless, Buhion et al. (2024) also noted that the effectiveness of these practices depends on consistent implementation and the broader operational environment.

Table 20 Spearman's Rank Correlation Result for the Extent of Spoilage Management Practices and Level of Financial Performance of Small-Scale Greengrocers

	Rho, p	**p**
Spoilage Management Practices Financial Performance	-.091	.396

- *Regression Analysis of Business Profiles as Predictors of Financial Performance*

Table 21 determines whether the business profiles act as a predictor of the financial performance of small-scale greengrocers.

The regression model ($R = 0.251$, $R^2 = 0.063$) indicates that 6.3% of the variance in the financial performance of small-scale greengrocers can be explained by their business profiles. Given the proportion of variance explained is relatively low, the model was found to be not statistically significant. The standardized coefficient for nature of product ($ß = 0.201$) reinforces the positive relationship with a moderate direct effect on the financial performance of small-scale greengrocers, while for capitalization ($ß = -0.058$) and years of business operation ($ß = -0.168$) reinforce the negative relationship. It appears that the result for capitalization is low, and for years of business operation is moderate, but both have inverse effects on the financial performance of small-scale greengrocers. The data analysis also revealed that the nature of product ($t = 1.902$, $p = 0.061$), capitalization ($t = -0.526$, $p = 0.600$), and years of business operation ($t = -1.544$, $p = 0.126$) were all not predictors of the financial performance of small-scale greengrocers, the null hypothesis is not rejected.

The findings signify that the business profiles are not significant predictors of the financial performance of small-scale greengrocers in this study. Although the nature of the product showed a tendency towards a positive relationship ($ß = 0.201$), this relationship was not statistically significant ($p = 0.061$). Similarly, capitalization ($ß = -0.058$) and years of business operation ($ß = -0.168$) showed weak negative relationships, respectively. This implies that having more capital or being in business longer does not necessarily imply better financial performance for small-scale greengrocers, and might have a slight inverse effect, though these findings were also not statistically significant ($p = 0.600$ and $p = 0.126$), respectively.

The current study's findings align with the studies of Mukaddam and Sibindi (2020) who also highlighted a potentially weak or non-existent relationship between these variables. Similarly, the non-significant negative trend observed for years of business operation weakly corresponds with the concept of "liabilities of age" discussed by Hastuti et al. (2019), which suggests performance might diminish in older firms due to factors like lower commitment. Although the positive coefficient for the nature of the product was non-significant, the complexity noted by Niftiyev (2021) regarding the varying profitability and volatility of fruits or vegetables hints that a clear, significant relationship isn't always guaranteed. However, the lack of statistical significance for all business profile variables in this study contrasts sharply with a substantial body of research emphasizing their importance. Numerous studies assert that higher capitalization positively influences financial performance and stability (e.g., Winarsih et al., 2021; Cooper et al., 1994; Harris, 2020; Addo, 2017), contradicting the current findings.

Likewise, the non-significant result for years of operation opposes research indicating that longer experience and operational history typically lead to better financial outcomes due to enhanced efficiency, market understanding, and stability (e.g., Chiliya and Roberts-Lombard, 2012; Puspaningrum, 2019; Ghimire, 2015; Hastuti et al., 2019). Furthermore, the non-significant finding for the nature of the product diverges from studies that identified it as a predictor of financial performance (Alsbu et al., 2023; Kusumah et al., 2023).

Table 21 Regression Analysis of Business Profiles as Predictors of Financial Performance

Coefficients							
Variable	**R**	**R^2**	**Unstandardized Coefficient**		**Standardized Coefficient**	**t**	**p-value**
			B	Std. Error	Beta		
	.251	.063					
(Constant)			2.604	.226		11.541	<.001
Nature of Products			.178	.093	.201	1.902	.061
Capitalization			-.045	.086	-.058	-.526	.600
Years of Business Operation			-.132	.085	-.168	-1.544	.126

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CHAPTER FIVE
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter provides the summary of research findings, presents the conclusions derived from the study, and recommendations for future research.

➢ *Summary*

This study aimed to determine the extent of spoilage management practices of small-scale greengrocers in terms of procurement, transportation, storage, handling, and disposal, as well as their level of financial performance according to their sales, cost, and profit. This study also examined the variables when taken as a whole and when grouped according to the small-scale greengrocers' business profiles, specifically the nature of product, capitalization, and years of business operation.

A descriptive-correlational research design using a quantitative approach was employed. The data was gathered using an adopted standardized questionnaire for financial performance and a researcher-made questionnaire for spoilage management practices. The participants were small-scale greengrocers operating in one of the major public markets in Bacolod City, Negros Occidental, as of April 10, 2025. From a total population of 115 greengrocers (31 fruit vendors and 84 vegetable vendors), a sample size of 89 (24 fruit vendors and 65 vegetable vendors) was determined using Yamane's formula and selected through stratified random sampling. Descriptive statistics, such as *mean* and *standard deviation*, as well as inferential statistics, such as *Independent T-test*, *Mann Whitney U*, *Spearman's Rank Correlation*, and *Multiple Linear Regression*, were used to examine the collected data.

The study's findings indicated that the overall results of the extent of spoilage management practices were *great*, with areas such as procurement and handling having *very great* results, while areas such as transportation and storage having *great* results. However, in terms of disposal, the result was notably *low*. In addition, when grouped according to nature of product, capitalization, and years of business operation, the overall extent of practices remained *great*. Furthermore, the overall level of financial performance was *high*, with areas such as sales and cost having *high* results, while in terms of profit, results were perceived *low*. In addition, when grouped according to nature of product, capitalization, and years of business operation, the overall level of financial performance also remained *high*.

Further analysis revealed no significant difference in the extent of spoilage management practices when grouped according to their business profiles and no significant difference was found in the level of financial performance in terms of the capitalization and years of business operation. However, a significant difference was found in the level of financial performance in terms of the nature of the product. Additionally, no significant relationship was found between the overall extent of spoilage management practices and the overall level of financial performance. Lastly, the results of regression analysis indicated that business profiles are not significant predictors of the financial performance of small-scale greengrocers.

➢ *Conclusions*

Small-scale greengrocers have widely adopted spoilage management practices across their operations, effectively minimizing spoilages. This strong implementation is consistent overall and remains evident when grouped according to nature of product, capitalization, and years of business operation. Notably, small-scale greengrocers exhibit strong spoilage management in terms of procurement and handling.

However, their capacity to implement advanced temperature control technologies is limited in transportation and storage, which, despite receiving positive ratings, remain areas for further improvement to enhance product quality, minimize spoilage, and boost overall financial performance. Disposal, however, stands out as the weakest link, receiving the lowest rating and revealing a clear need for focused interventions to improve its effectiveness and overall spoilage reduction efforts.

Despite spoilage management practices having been widely implemented across the operations of small-scale greengrocers, several critical areas still demand attention, particularly concerning financial performance. Profitability remains constrained, most likely due to underlying operational inefficiencies such as poor inventory management and disposal strategies, which result in increased spoilage loss, and disproportionately high overhead costs, such as rent. This is evident in the persistently low net profit margins, underscoring the need for more effective sales promotions, operational strategies, and tighter cost management to enhance overall financial outcomes. Targeted interventions, particularly in financial and operational management, should be implemented to support small-scale greengrocers in addressing these challenges and strengthening the effectiveness of their spoilage management practices, ensuring consistent improvements that create a desirable impact on overall financial performance.

The study highlights significant differences in the financial performance of small-scale greengrocers based on the nature of products they sell, whether fruits or vegetables. Vendors dealing primarily in fruits generally achieve stronger sales and higher profits compared to those focusing on vegetables. Overall, although spoilage management is widely practiced across the sector, the findings suggest that tailored strategies are essential to address the unique challenges of each greengrocer. These customized interventions can enhance financial outcomes and contribute to more sustainable business growth.

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➢ *Recommendations*

Based on the results and conclusions of the study, the following recommendations are put forth by the researchers:

- *Small-Scale Greengrocers*

The following recommendations for the small-scale greengrocers operating in one of the major public markets in Bacolod City are derived from the results and conclusions of this study regarding their spoilage management practices and financial performance:

✓ *Enhance Cold Chain Practices*

The study identified procurement and handling practices as strong points. However, significant gaps exist in using refrigeration during transportation and storage, which were rated as areas needing improvement and received low scores for the use of temperature-controlled methods. Therefore, small-scale greengrocers should actively explore cost-effective cooling methods, potentially through collaborative purchasing initiatives or by seeking support programs designed for acquiring refrigeration units. This is particularly important for minimizing spoilage of temperature sensitive fruits or vegetables and addressing the identified weaknesses in transportation and storage practices.

✓ *Improve Disposal Management*

The findings of the study revealed disposal as the weakest area in spoilage management practices, receiving the lowest overall rating among the indicators. Specifically, converting spoiled fruits or vegetables into fertilizer or value-added products like jams and sauces showed low adoption rates. Therefore, small-scale greengrocers are encouraged to attend training sessions or seek guidance on practical composting techniques and simple value-addition methods. Implementing these can help reduce waste and potentially create new income streams from produce that is slightly damaged but still edible.

✓ *Strengthen Supplier Relationship Management*

The study identified forecasting demand and determining order quantity are well-practiced aspects of procurement rated as very great. On the other hand, selecting suppliers who consistently meet delivery schedules received a slightly lower rating. Hence, small-scale greengrocers should actively seek out and cultivate relationships with suppliers known for quality and reliability, clearly communicate their scheduling needs and requirements, and develop contingency plans to mitigate potential disruptions caused by inconsistent deliveries.

✓ *Maintain Handling Hygiene Consistency*

Based on the study's findings, the overall handling practices were very great, indicating strong performance in areas like sorting and minimizing bruising. Nonetheless, the specific practice of using gloves or sanitized hands when handling fresh produce showed greater variability. With that being the case, small-scale greengrocers should reinforce these practices daily and consistently, as the consistent application of hygiene protocols is important for food safety and spoilage prevention.

✓ *Seek Financial Management Support*

Despite the study's findings of high overall financial performance ratings in sales and cost, profit levels remained low. Thus, small-scale greengrocers should seek opportunities for basic financial literacy and management training. Such training can equip them with skills to better track expenses, optimize pricing strategies, manage inventory effectively, and improve not just the overall profitability but the financial performance as a whole.

By implementing these recommendations, small-scale greengrocers can address key operational weaknesses identified in the study, potentially reducing spoilage losses, and improve their financial stability.

- *Prospective Entrepreneurs and Investors*

Based on the findings and conclusions of the study, these recommendations are made to prospective entrepreneurs and investors considering opportunities related to the fresh produce sector:

✓ *Identify Investment Opportunities in the Cold Chain*

The findings highlighted a significant lack of refrigerated transport and storage among small-scale greengrocers, often due to cost. This presents opportunities for entrepreneurs or investors to offer affordable cold storage rental services, refrigerated logistics solutions, or financing for cooling equipment tailored to small businesses.

✓ *Provide Seminars and Training Regarding Spoilage Disposal*

The findings of this study revealed that there is a lack of knowledge and awareness on other ways of spoilage disposal. Entrepreneurs, whose expertise are under this field, may provide the small-scale greengrocers with seminars or training to educate them about the best possible ways to repurpose or dispose their spoiled products instead of directly throwing them away.

✓ *Establish Possible Partnerships in Business*

The findings of this study suggested that small-scale greengrocers experience inconsistencies and challenges in their overall profitability. Prospective entrepreneurs and investors can possibly form a partnership with these small-scale greengrocers by also

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making them as suppliers of spoiled foods that they can use in making value-added products. Prospective entrepreneurs and investors can possibly venture in a business that specializes in selling value-added products such as jams and sauces, wherein they can buy the spoiled products of these greengrocers and turn them into a value-added product that they sell in the market.

✓ *Look for Investment Opportunities in Shared Facilities or Form Cooperatives*

The study, according to its findings, revealed the lack of useful storage facilities that small-scale greengrocers can use. Accordingly, the investors can provide or invest in huge shared storage facilities, such as warehouses, that the multiple small-scale greengrocers can use for their products. With these, costs for the small-scale greengrocers will not be too expensive as it is a shared expense, and at the same time, the investor can also have a return on their investment.

✓ *Support and Promote Small-Scale Greengrocers and Fund Development Programs*

Prospective entrepreneurs can support small-scale greengrocers by promoting them to the consumers. This promotion can be included in the "buy local" campaign. Additionally, the prospective entrepreneurs can also purchase from small-scale greengrocers and sell them at a retail price. Moreover, the investors can also fund and invest in development programs for the small-scale greengrocers, wherein it will allow them to continuously develop further knowledge when it comes to spoilage management practices as well as proper spoilage management practices depending on the products that they are selling. These development programs can also allow the small-scale greengrocers to interact and share their own ideas and practices with one another.

- *Suppliers*

Based on the findings and conclusions of the study, the following recommendations are made for suppliers who provide goods to small-scale greengrocers:

✓ *Enhance Product Quality and Minimize Spoilage*

Suppliers should consistently deliver high-quality, freshly harvested produce to support the strong procurement and handling practices of small-scale greengrocers. This includes implementing strict quality control measures during harvesting, packing, and pre-shipment handling, ensuring produce is sorted and packaged to minimize bruising and mechanical damage; and adopting best practices post-harvest management to extend shelf life and minimize spoilage before delivery.

✓ *Invest in Improved Transportation and Storage Solutions*

Given the identified gaps in transportation and storage, suppliers are encouraged to invest in or collaborate on the use of refrigerated vehicles, insulated containers, or other temperature-control solutions for transporting perishable goods. Additionally, suppliers should explore shared logistics with other suppliers or greengrocers to make cold chain solutions more affordable. Lastly, regular monitoring and maintenance of vehicles and storage facilities are also essential to ensure consistent temperature and hygiene standards, thereby reducing spoilage and enhancing the overall quality of goods delivered to greengrocers.

✓ *Collaborate on Disposal and Waste Management Initiatives*

To address weaknesses in disposal practices, suppliers should partner with greengrocers to establish take-back programs for unsold or spoiled produce. They should also offer guidance and resources on composting, upcycling, or donating excess produce to local organizations or processors. Facilitating connection with local livestock owners, food processors, or non- profit that can utilize surplus or substandard produce will help reduce waste and support community sustainability.

✓ *Offering Flexible Supply Arrangements*

Suppliers can help greengrocers better manage inventory and reduce spoilage by offering more flexible delivery schedules tailored to the varying needs of small-scale greengrocers. Allowing for smaller, more frequent orders, especially for highly perishable items. Communicating proactively about supply chain disruptions will enable greengrocers to adjust their procurement and sales strategies accordingly.

✓ *Provide Training and Support*

Suppliers should contribute to capacity building by providing training sessions or informational materials on best practices for handling, storage, and spoilage prevention. By sharing up-to-date knowledge on new technologies, packaging solutions, and market trends relevant to spoilage reduction, offering on-site demonstrations or virtual workshops to help greengrocers implement effective spoilage management techniques

By implementing these recommendations, suppliers can strengthen their partnership with small-scale greengrocers, enhance the efficiency of the supply chain, and contribute to improved financial performance and reduced spoilage within the sector. This collaborative approach ensures that both suppliers and greengrocers benefit from more sustainable, profitable, and efficient operations, ultimately supporting the growth and stability of the fresh produce market in Bacolod City and Beyond.

- *LGU Officials*

Based on the findings of the study, these recommendations are made to the Local Government Officials and LGU of Bacolod City, Negros Occidental, to augment and reinforce the efforts of the researchers in conducting this research study:

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✓ *Study and Pilot Efficient Transportation Solutions*

Based on the findings of the researchers, the transportation of fruits or vegetables received an overall great result with a minor exception. Therefore, the LGU Officials should prioritize and investigate the challenge faced by small-scale greengrocers, primarily the lack of refrigeration systems in vehicles used for transporting goods. Despite the very great result in other items, LGU must still make improvements in the sanitation of vehicles and poor road conditions. That's why these LGU Officials should pilot solutions like scheduled deliveries or shared transport services, because this can contribute to an efficient transportation that minimizes product loss during transit, extends shelf life, and increases the volume of marketable goods, boosting sales and income.

✓ *Enhancing Disposal Strategies through Partnerships with Local Processors*

The findings highlight that while some spoilage management practices in terms of disposal are being practiced effectively, others lag behind and present opportunities for improvement. Therefore, the LGU Officials should focus on addressing the weaker areas by providing targeted support and resources. This could involve organizing training sessions on composting techniques and value-added processing, supplying necessary equipment or starter kits for fertilizer production, and facilitating partnerships between small-scale greengrocers and local processors or livestock owners. Additionally, LGUs can explore incentives or small grants to encourage innovation in turning spoiled produce into marketable products, such as jams or sauces, which currently have low adoption rates.

✓ *Prioritizing Refrigeration Access*

The findings highlight that most small-scale greengrocers lack access to or do not utilize refrigeration, likely due to its costly price or lack of awareness about its benefits. This shortfall is critical, as refrigeration is essential for prolonging the shelf life of perishable produce, especially in warm climates, and can significantly reduce post-harvest losses. Therefore, the LGU Officials should prioritize initiatives to improve access to affordable and appropriate refrigeration solutions for small-scale greengrocers. This could include providing subsidies for purchasing refrigeration units, setting up shared cold storage facilities, or introducing training programs on low-cost cooling techniques. By addressing this key weakness, LGUs can help small-scale greengrocers further reduce spoilage, maintain product quality, and ultimately increase their profitability and resilience in the marketplace.

✓ *Strengthening Procurement Practices*

It is recommended that LGU Officials of Bacolod City, Negros Occidental, should support small-scale greengrocers by facilitating supplier development programs, such as supplier accreditation or regular performance reviews, to ensure consistent and timely deliveries. Additionally, LGUs can offer training on advanced demand forecasting techniques and digital inventory management tools. By reinforcing these procurement practices, greengrocers can further reduce spoilage, improve profitability, and strengthen the overall efficiency of the local food supply chain.

✓ *Strengthening Produce Handling Practices through Food Safety and Hygiene Training Workshops*

The LGU Officials of Bacolod City Negros Occidental can launch regular food safety and hygiene training workshops specifically tailored for greengrocers, emphasizing the importance of hand hygiene and demonstrating proper techniques. In addition, they can initiate a subsidized supply program for essential hygiene materials such as disposable gloves, hand sanitizers, and handwashing stations within market areas.

By implementing these initiatives, it can lead to reduced spoilage, improved food safety, and greater consumer confidence in local produce, ultimately supporting the sustainability and profitability of small-scale greengrocers in the community.

- *Market Administrators*

Based on the findings of this study, these recommendations are provided for the Market Administrators, who are the staff in charge in monitoring and managing the policies that will enhance market conditions of small-scale greengrocers:

✓ *Develop Programs that will Improve Storage and Handling*

The study identified storage as great and handling as very great. In order to improve these areas, market administrators should consider investing in improving storage facilities within markets, such as cold storage, post-harvest technologies, and proper shelving; this will help reduce spoilage and extend the shelf life of fresh produce.

Market administrators can collaborate with small-scale greengrocers to form a cooperative among small-scale greengrocers to pool resources and technologies and maintain the cold storage and facilities that they can use to minimize spoilage and maintain the quality of their products. The provision of shared cold storage facilities within the market will ensure readily accessible and affordable cold chain solutions for all small-scale greengrocers. Through this approach, it will reduce individual financial burdens and promote the knowledge of sharing among small-scale greengrocers.

✓ *Comprehensive Training Programs*

Market administrators should provide training programs on best practices for procurement, transportation, storage, handling, and disposal in order to minimize spoilage and maintain product quality. By sharing knowledge and supporting the development of their marketing channels and local fresh produce networks, they can enhance market access and profitability of small-scale

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greengrocers. The training programs should be practical, hands-on, and tailored to the specific needs and challenges faced by small-scale greengrocers. This must include training on food safety and handling, hygiene, and proper inventory management.

✓ *Implement Subsidies and Financial Support*

The study identified sales as high and profit as low, this might affect the capacity of small-scale greengrocers to upgrade their facilities. By offering subsidies or financial incentives especially to small-scale greengrocers in order for them to upgrade their storage equipment or facilities that will help reduce food loss and improve their product quality. The implementation of financial assistance programs will encourage small-scale greengrocers to upgrade their storage facilities and equipment. The subsidies should include subsidies for purchasing energy-efficient refrigeration units, improved shelving, and pest control measures.

✓ *Financial Support and Access to Credit*

Based on the result of the study, the financial performance of small-scale greengrocers is concerning. Persistent low profit margin was due to underlying operational efficiencies and tighter cost management. By facilitating access to affordable credit for additional capital, will encourage small-scale greengrocers to invest in better spoilage management tools and expand their business. Therefore, market administrators should prioritize small-scale greengrocers with lower capitalization in this program to help strengthen their market power. This will allow small-scale greengrocers to purchase energy-efficient refrigeration units that will help them to minimize food spoilage. In addition, partnering with financial institutions with favorable credit terms and conditions will help cater the needs of greengrocers.

✓ *Strengthen Spoilage Management Regulatory Frameworks*

Based on the research findings, overall spoilage management practices were great and that small-scale greengrocers were able to effectively manage spoilage. Despite the great result, market administrators should further improve their regulations and policies especially in terms of disposal. Hence, market administrators should establish clear standards and guidelines for product quality, packaging, storage, and disposal that is feasible to small-scale greengrocers to comply with, this will ensure food safety and reduce losses. Moreover, implementing effective waste management systems within the market to facilitate the efficient and sustainable disposal of spoiled products should include compost programs or partnerships with the local government about waste management.

✓ *Market Policy and Regular Spoilage Audit*

Based on the result of the study, small-scale greengrocers have a positive result in terms of procurement and sales but it requires minor improvement. By creating policies that ensure timely market information dissemination, will allow greengrocers to make informed decisions on procurement and sales. Therefore, market administrators should establish a system for timely dissemination of market information, including price trends, demand forecasts, and spoilage management practices as this will allow greengrocers to optimize strategies. The policies should also include conducting regular food loss audits within the market in order to identify what products are vulnerable to spoilage.

By implementing these recommendations, market administrators can help small-scale greengrocers to significantly reduce spoilage, improve the quality of their products, enhance their profitability, improve food safety, and contribute to a sustainable business.

- *Academicians*

Given the findings of this research, academicians including teachers, instructors, and researchers—play a vital role in enhancing knowledge and skills related to spoilage management practices and financial sustainability in the fresh produce sector. To maximize the impact of this study on teaching and learning, the following recommendations are proposed:

✓ *Integrate Practical Spoilage Management Practices in the Curriculum*

The study revealed that hands-on experience in spoilage management, such as procurement planning, proper storage, and careful handling, is essential for effective learning and real-world application. Therefore, academic institutions should incorporate practical lessons, demonstrations, and case studies on these topics into agriculture, business, and food science courses. This can be achieved by designing laboratory activities, simulation exercises, and scenario-based assessments that mirror the challenges faced by small-scale greengrocers. By doing so, students will be better equipped to address spoilage issues and apply best practices in retail and supply chain settings.

✓ *Promote the Use of Predictive and Data-Driven Approaches*

The findings highlighted that accurate demand forecasting and sales projections are crucial in minimizing spoilage. Academicians should encourage students to utilize basic statistical tools, data analysis software, and technological applications to anticipate demand and optimize inventory management. This can be reinforced by integrating forecasting exercises, real-life data analysis, and digital literacy modules into the curriculum, enabling students to develop analytical skills that are directly relevant to spoilage mitigation and business decision-making**.**

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✓ *Facilitate Field Visits and Industry Linkages*

Practical exposure to spoilage management challenges was shown to be highly valuable. Academic programs should organize field trips to local markets, farms, or greengrocers, and invite practitioners as guest speakers or mentors. These activities will provide students with firsthand insights into best practices, operational realities, and innovative solutions in spoilage management. Establishing partnerships with industry stakeholders can further enhance experiential learning and foster meaningful connections between academicians and the fresh produce sector.

✓ *Encourage Research and Innovation Projects*

The need for improved spoilage management and storage solutions calls for active research and innovation. Academicians should support and guide student-led projects that focus on developing cost-effective, sustainable, and locally adapted strategies for small-scale greengrocers. This can include research on affordable refrigeration, improved packaging, or new handling techniques. By fostering a culture of inquiry and creativity, academic institutions can contribute to industry-relevant knowledge and empower students to become problem-solvers and innovators.

✓ *Provide Training on Financial Sustainability*

The study underscores the importance of linking operational practices to financial performance. Academicians are encouraged to offer workshops, seminars, or modules on financial management, cost control, and business growth strategies tailored to the needs of small-scale greengrocers and agricultural enterprises. These training sessions should cover budgeting, pricing, record-keeping, and profit analysis, helping students understand how to enhance both operational efficiency and financial sustainability in their future careers or entrepreneurial ventures.

By adopting these recommendations, academicians can ensure that students are well-prepared to tackle real-world challenges in the fresh produce industry, thereby contributing to improved spoilage management, business innovation, and financial profitability and sustainability.

- *Researchers*

Based on the findings of the study, the following factors are recommended to the researchers in crafting the strategies in a mini booklet:

✓ *Supplier Relationship Development and Selection Strategies*

The study found that while small-scale greengrocers highly value selecting suppliers who deliver on schedule, this practice received slightly less emphasis compared to other procurement strategies, indicating some challenges in consistently maintaining reliable supplier relationships. In developing the IEC material (mini booklet), researchers should visually highlight the importance of choosing dependable and quality suppliers, and building a business relationship with them by using checklists or flowcharts that guide greengrocers in evaluating supplier reliability and delivery consistency. The mini booklet can also compare the benefits of working with trustworthy suppliers, such as fewer delays, fresher products, and reduced spoilage to situations where supplier reliability is lacking. By focusing on this area, the IEC material can help greengrocers recognize and address the variability in supplier performance identified in the study, ultimately supporting more consistent spoilage management.

✓ *Transportation Sanitation and Scheduling Strategies*

The study found that while small-scale greengrocers place high importance on maintaining the cleanliness and sanitation of vehicles used for transporting goods, as well as planning timely delivery schedules to avoid delays and traffic, these areas still need further attention. These practices were among the most consistently applied transportation strategies, helping to prevent contamination and reduce spoilage during transit. However, there is still room for improvement. When developing the IEC material (mini booklet), researchers should use clear visuals to demonstrate the step-by-step routines for cleaning delivery vehicles and creating efficient delivery schedules. The mini booklet can show how regular sanitation prevents spoilage and how timely deliveries ensure fruits and vegetables stay fresh. By focusing on these best practices, the IEC material will reinforce the effective habits already established by small-scale greengrocers, as highlighted by the study's results, and encourage continued and much better commitment to clean and punctual transportation.

✓ *Emphasizing Refrigeration Systems*

The study revealed that small-scale greengrocers rarely use refrigeration systems for transporting and storing fruits or vegetables, with these practices receiving the lowest ratings among all spoilage management strategies. This gap is mainly due to financial constraints and the high cost of acquiring or maintaining refrigeration equipment. When developing the IEC material (mini booklet), researchers should clearly illustrate the benefits of using refrigeration such as keeping produce fresh longer, reducing spoilage, and offer practical suggestions for overcoming barriers. The mini booklet can show simple and affordable alternatives or step-by-step guides for gradually upgrading to temperature-controlled storage and transport. By focusing on this area, the IEC material can encourage small-scale greengrocers to consider refrigeration as a valuable investment, directly addressing the significant challenge identified in the study and supporting better spoilage management in the long run.

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✓ *Proper Operational Sanitation Strategies*

The study revealed that although small-scale greengrocers place significant importance on using gloves or maintaining sanitized hands when handling fresh produce, this practice was given slightly less priority compared to other handling methods. This suggests challenges in maintaining consistent sanitation standards during operations. Therefore, when developing Information, Education, and Communication (IEC) material such as a mini booklet, it is essential to highlight the critical role of hand hygiene, whether through glove use or proper hand sanitization. Additionally, visual guides demonstrating correct practices should be incorporated to support small-scale greengrocers in strengthening the consistency and reliability of their sanitation procedures. The mini booklet can effectively illustrate how consistent hand hygiene and proper sanitation during daily operations help prevent spoilage and maintain the freshness of fruits or vegetables. By showcasing these best practices, the IEC materials will not only reinforce the positive habits already adopted by greengrocers, as indicated in the study, but also promote stronger, ongoing commitment to hygienic handling procedures, ultimately supporting safer and higher-quality produce management.

✓ *Sustainable Disposal Management Strategies*

The study found that small-scale greengrocers are diligent in regularly inspecting stored fruits or vegetables and promptly removing spoiled items, which was among the highest-rated storage practices. However, there is less emphasis on what happens to spoiled produce after removal, suggesting that disposal practices are not as developed or consistently applied as other spoilage management strategies, which was reflected in the findings of this study where disposal got the lowest ratings among all spoilage management practices.

When developing the IEC material (mini booklet), researchers should use clear visuals to show simple, eco-friendly ways to dispose of spoiled fruits or vegetables, such as composting or turning spoilages into animal feed. Also, turning spoilages into value-added or profit-generating products instead of directly putting it to waste can be illustrated. The mini booklet can outline easy steps for responsible disposal and highlight the benefits of these methods, including a cleaner environment and potential cost savings. By focusing on this area, the IEC material can help small-scale greengrocers strengthen their spoilage management by not only removing spoiled items but also disposing them in a way that is safe, sustainable, and beneficial for the community, directly addressing the gap identified in the study.

✓ *Financial Management Literacy*

The study found that, despite consistently applying effective spoilage management practices, small-scale greengrocers continue to exhibit low levels of financial performance. This disconnect may stem from various financial management challenges, including limited financial literacy, overspending, poor budgeting practices, and a heavy reliance on credit. To address these issues, the development of IEC material, such as a mini booklet, should include clear, engaging educational content aimed at enhancing financial literacy. These materials should introduce practical financial tools, offer budgeting strategies, and provide actionable tips to help greengrocers overcome common financial barriers. By emphasizing this area, the IEC materials can empower greengrocers to make more informed financial decisions, directly tackling the financial shortcomings identified in the study and promoting long-term financial stability and growth.

✓ *Sales Promotional Strategies*

The study indicated that although small-scale greengrocers demonstrate relatively high levels of financial performance in terms of sales, there remains a clear need for further improvement in this area. This suggests ongoing challenges in sustaining consistent sales growth, which may stem from various factors related to how products are promoted and influenced by circumstances, such as seasonal demand fluctuations, pricing strategies, market competition, and other external influences.

To address these challenges, IEC material, particularly a mini booklet, should visually present effective promotional strategies tailored to the context of small-scale greengrocers. These materials can demonstrate how strong sales promotion not only boosts sales but also helps minimize spoilage and enhance overall financial health. By focusing on this critical area, IEC content can equip greengrocers with practical knowledge on marketing and product promotion, leading to improved sales performance and addressing the sales-related gap identified in the study, ultimately supporting stronger financial outcomes over time.

✓ *Efficient Cost Management*

The study revealed that, although small-scale greengrocers exhibit relatively strong financial performance in terms of cost control, there remains a discernible need for further improvement in this domain. These findings suggest underlying challenges in maintaining consistent and efficient cost management practices. This performance gap may be attributed to various factors influencing cost handling, such as rising fixed expenses, such as rent, and the maintenance of relatively high inventory and supply levels. To address these issues, the development of IEC material, particularly a mini booklet, should incorporate clearly illustrated strategies aimed at improving cost management among greengrocers.

These materials should also feature accessible, well-designed educational content that promotes practical approaches to managing operational expenses effectively. By emphasizing this area, the IEC materials can enhance greengrocers' understanding and application of cost control measures, thereby fostering improved profitability. Such efforts directly address the cost-related challenges identified in the study and support the long-term financial sustainability of small-scale greengrocers.

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✓ *Enhancing Operational Efficiency*

The study revealed that while small-scale greengrocers demonstrated commendable financial performance in terms of sales and cost management, these strengths did not correspond to equally favorable profitability outcomes. Specifically, although gross profit margins were high, indicating robust earnings after accounting for the cost of goods sold, net profit remained comparatively low, pointing to significant challenges in controlling operational costs and expenses. This disparity underscores a critical need to enhance profit-generation strategies.

In light of these findings, the development of IEC material, particularly a mini booklet, should focus on illustrating practical, evidence-based strategies aimed at improving overall operational efficiency. Such materials should also incorporate accessible and visually engaging educational content to support greengrocers in enhancing their operational-effectiveness and business practices. By targeting this area, IEC interventions can strengthen greengrocers' operational capabilities, thereby increasing profitability, addressing the issue identified in the study, and promoting more sustainable profitability over time.

- *Future Researchers*

Based on this study's findings and conclusions, here are the recommendations for future researchers interested in the same topic:

✓ *Explore Effects of Training and Skills Development*

The study found that small-scale greengrocers consistently practice effective procurement, handling, and storage techniques, but there are gaps in areas such as supplier reliability and the use of advanced technologies like refrigeration. Given these findings, future researchers could design and assess training and skills development programs focused on addressing these specific gaps. By evaluating the impact of targeted training-such as workshops on supplier relationship management, transportation scheduling, and the use of temperature-controlled storage, researchers can determine whether improved knowledge and skills lead to even greater reductions in spoilage. This approach would help ensure that small-scale greengrocers not only maintain their strengths but also overcome the persistent challenges identified in the study.

✓ *Highlight Financial Gains from Reducing Spoilage*

The results of the study showed that small-scale greengrocers who excel in procurement planning and proper handling might experience lower spoilage rates, which likely contributes to better financial performance. Future researchers could quantify the economic benefits of these spoilage management practices by comparing the financial outcomes of small-scale greengrocers who implement them at a high level with those who do not. By clearly demonstrating the link between reduced spoilage and increased profits or cost savings, future studies can provide strong motivation for greengrocers and stakeholders to invest in best practices. This evidence-based approach will help reinforce the value of spoilage management as a driver of business sustainability.

✓ *Promote New Spoilage Management Solutions*

The study identified that the use of refrigeration systems in both transportation and storage is practiced at a low level among small-scale greengrocers, mainly due to financial and technical barriers. In response, future researchers could focus on developing and piloting innovative and affordable spoilage management solutions such as low-cost refrigeration units, solar-powered coolers, or improved packaging methods, tailored to the needs of small-scale vendors. By testing these solutions in real-world settings and measuring their effectiveness in reducing spoilage, researchers can help bridge the gap identified in the study and offer practical, scalable options for small-scale greengrocers facing resource constraints.

✓ *Encourage Eco-Friendly Disposal Methods*

The study highlighted that while greengrocers are effective at removing spoiled produce from storage, there is less emphasis on what happens to waste after removal. Future researchers could explore and promote sustainable disposal methods, such as composting, converting waste to animal feed, or biogas production, that are feasible for small-scale operations. By assessing the practicality, environmental benefits, and potential cost savings of these methods, researchers can bridge the gap identified in the study and help greengrocers turn a necessary task into an opportunity for added value and environmental stewardship, directly addressing the need for responsible end-of-life management of spoiled produce identified in the study.

✓ *Examine Impact of Fixed Cost on Spoilage and Financial Performance*

A notable gap in the study is the limited insight into how fixed overhead costs, such as rent and utilities, affect spoilage-related losses in small-scale greengrocers' operations. Future research should examine the relationship between fixed costs-to-revenue ratios and spoilage rates. Additionally, studies should assess the financial benefits of adopting energy-efficient refrigeration, particularly in terms of lowering utility expenses and reducing spoilage. These investigations would contribute valuable evidence to support strategies aimed at improving the financial sustainability of small-scale greengrocers dealing with perishable goods.

✓ *Financial Metric Development for Perishable Retail*

Standard financial metrics like gross margin and inventory turnover often overlook the true impact of spoilage on small retailers' profitability, leading to an incomplete picture of financial health. Therefore, future research should develop new key performance indicators, such as Spoilage-Adjusted Gross Margin, which subtracts spoilage costs from revenue, and Inventory

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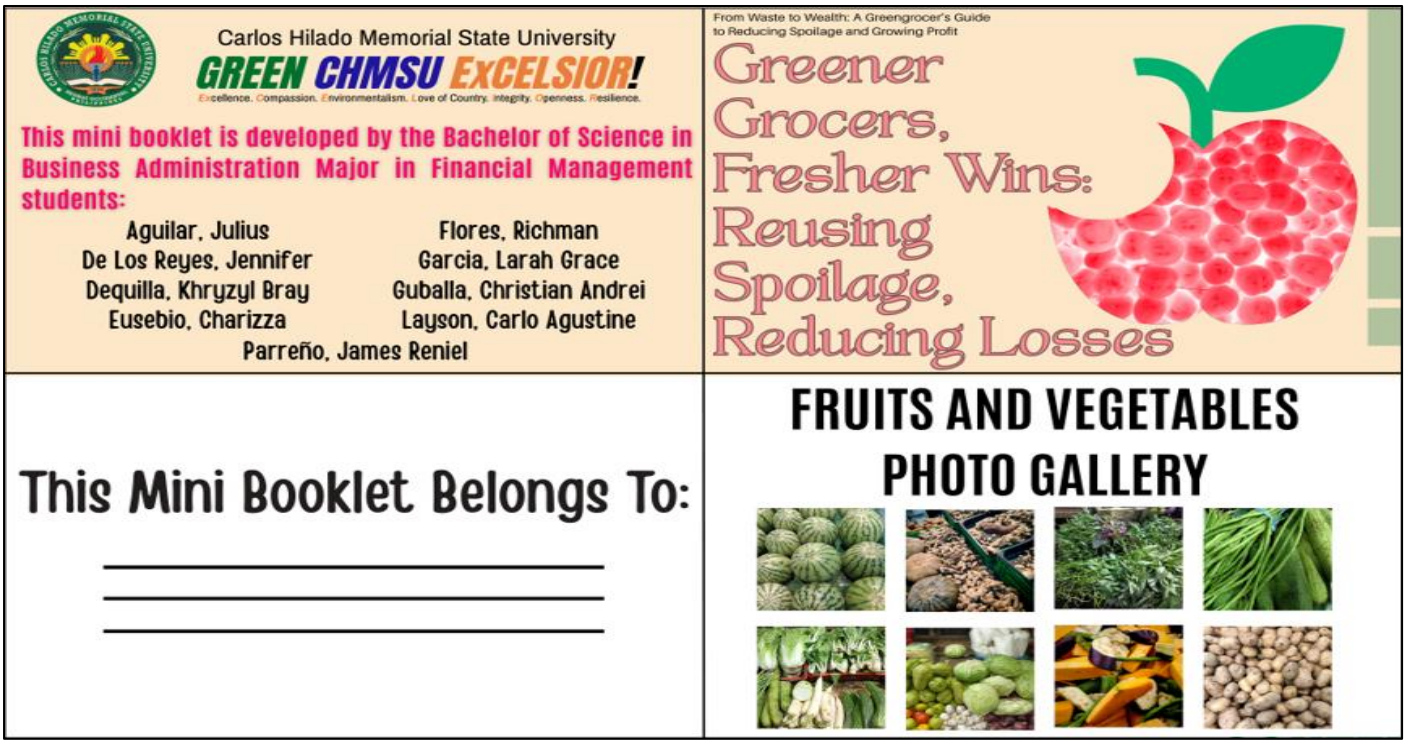
Turnover Efficiency Ratio, which factors in spoilage rates alongside turnover. These tailored metrics would more accurately reflect the financial realities of perishable produce by highlighting the trade-offs between inventory practices and waste. Validating these KPIs through long-term studies across different locations and business models would help ensure they reliably predict profitability and guide better inventory and cost management decisions for small-scale greengrocers.

➢ *Proposed Strategies for the IEC Material (Mini Booklet)*



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SUPPLIER RELATIONSHIP DEVELOPMENT AND SELECTION STRATEGIES

The success of your business depends not just on what you sell, but also on who you buy from. Choosing the right supplier and nurturing those relationships is crucial for consistent quality and less waste.

WHY STRATEGIC SUPPLIERS SELECTION MATTERS!

"The first step towards a reliable supply chain is choosing the right partners."

KEY CONSIDERATIONS FOR SUPPLIER SELECTION:

1. **Reliability First.** Prioritize suppliers with proven track record of consistency.
2. **Quality Assurance.** Ensure suppliers consistently provide high-quality produce that meets your standards and customers' expectations.
3. **Communication Channels.** Choose suppliers who are easy to communicate with and responsive to your needs.
4. **Fair Pricing and Terms.** Look for suppliers who offer competitive pricing and payment terms that work for your business.
5. **Local Knowledge.** Consider local suppliers who understand the specific needs and seasonality of produce

2

DEDICATION

This booklet is wholeheartedly dedicated to the hardworking small-scale greengrocers whose perseverance sustains communities and brings fresh produce to every table. It has been created with a deep understanding of the unique challenges you face, particularly the persistent issue of spoilage, which not only affects your financial health but also the quality of service you strive to provide.

Spoilage remains a critical concern in the fresh produce sector, especially for small-scale vendors who often have limited access to advanced storage and inventory systems. This project seeks to respond to that challenge by presenting practical, research-based strategies aimed at improving spoilage management, enhancing financial performance, and supporting the overall sustainability of your businesses.

The pages that follow contain a range of approaches, ranging from simple, low-cost solutions to more structured business strategies, all tailored to the realities and capacities of small-scale greengrocers. It is our sincere hope that the knowledge shared here empowers you to take confident steps toward greater efficiency, reduced waste, and improved profitability.

May this resource serve not only as a guide but as a gesture of appreciation for the vital role you play in local economies and food systems.

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LONG-TERM ADAVANTAGES OF GOOD SUPPLIER SELECTION

Consistent Quality and Supply	Competitive Advantage	Increased Profitability	Business Growth and Sustainability
Reliable partners ensure a steady flow of fresh, high-quality produce, reducing spoilage.	Access to better quality and reliable supply can set your business apart in the market.	Reduced spoilage and consistent stock lead to higher profits.	Strong partnerships contribute to a stable and growing business.

4

Localized and Diversified Procurement

OBJECTIVE:

Reduce supply chain disruptions and reduce procurement costs.

- Develop relationships with local farmers to obtain fresher products and enhance profit margins.
- Assess prospective suppliers based on cost, delivery reliability, and product quality.
- Explore joint purchasing opportunities with local greengrocers to obtain volume discounts.
- Diversify procurement channels to act as a buffer against shortages and price fluctuations.

Waste Reduction and Resource Recycle

OBJECTIVE:

Reduce waste disposal costs and enhance environmental stewardship.

- Offer reduced prices or bundle sales for cosmetically imperfect produce.
- Partner with local food donation agencies or composting programs.
- Convert unsold commodities into value-added products (e.g., juice, preserves).

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ENHANCING OPERATIONAL EFFICIENCY

Smart Inventory Management

OBJECTIVE:

Reduce spoilage, keep the best stock levels, and improve cash flow.

- **Use a First-In-First-Out (FIFO) system to sell older perishable items first.**
- **Review high-waste items on a weekly basis to optimize ordering habits.**
- **Set reorder points based on seasonal patterns of demand.**
- **Perform regular weekly checks to determine freshness and quality of inventory.**

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TRANSPORTATION SANITATION AND SCHEDULING STRATEGIES

Keep it CLEAN, Keep it QUICK!

WHAT IS TRANSPORT SANITATION?

It is the practice of keeping delivery vehicles (tricycle, van, or truck) clean inside and out. This prevents germs, pests, and dirt from damaging or spoiling fresh fruits or vegetables during transport.

HOW TO KEEP YOUR TRANSPORTATION CLEAN?

STEP ONE:

Empty Vehicle Daily: Remove crates, mats, and trash.

STEP TWO:

Sweep Out Debris: Get rid of dirt, leaves, and old fruits or vegetables bits.

5

Cost Management Approaches to Enhance Financial Performance

1. **Bulk purchasing and Efficient Stock Management.** Buying in bulk directly reduces the cost of goods sold (COGS), enabling businesses to either increase profit margins or offer more competitive pricing to attract customers. When this combined with stock management, it allows businesses to respond quickly to market changes and customer demands, supporting growth and scalability

2. **Regularly Review Expenses.** Conduct regular expense audits to identify and eliminate unnecessary or redundant costs. These strategies can help any business better manage costs, improve efficiency, and strengthen financial performance.

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WHAT IS SMART DELIVERY SCHEDULING?

It is the practice of planning delivery routes and time efficiently. The goal is to get fruits or vegetables delivered quickly and safely, avoiding delays, saving fuel, and ensuring maximum freshness upon arrival.

HOW TO SCHEDULE DELIVERIES SMARTLY?

STEP 1: **Plan Route Logically:** Figure out the shortest path to avoid backtracking.

STEP 2: **Go Early (if possible):** Avoid heavy traffic.

STEP 3: **Check the Time & Traffic:** Travel during less busy hours.

STEP 4: **Load Strategically:** Have fruits or vegetables ready and load the vehicle in reverse order of delivery.

STEP 5: **Allow Extra Time:** Plan for possible delays (traffic, loading, or unloading).

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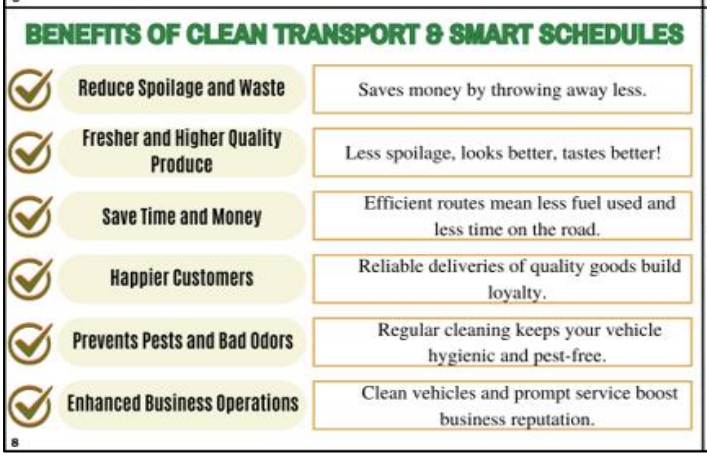

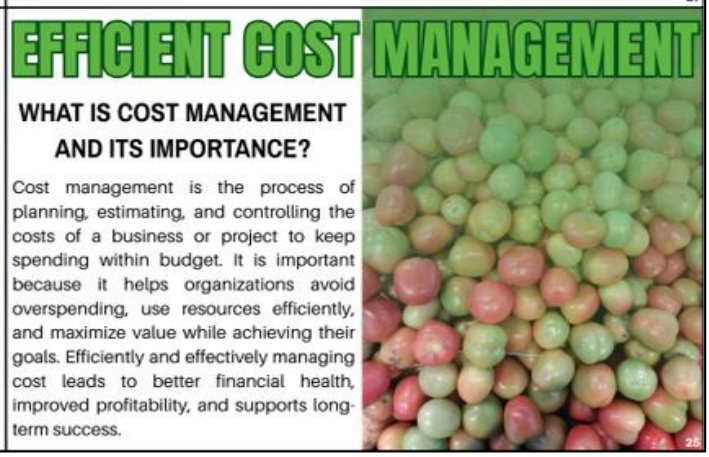

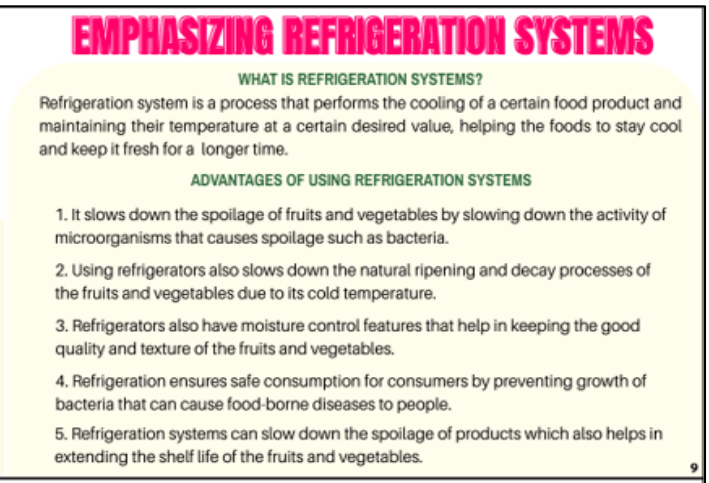

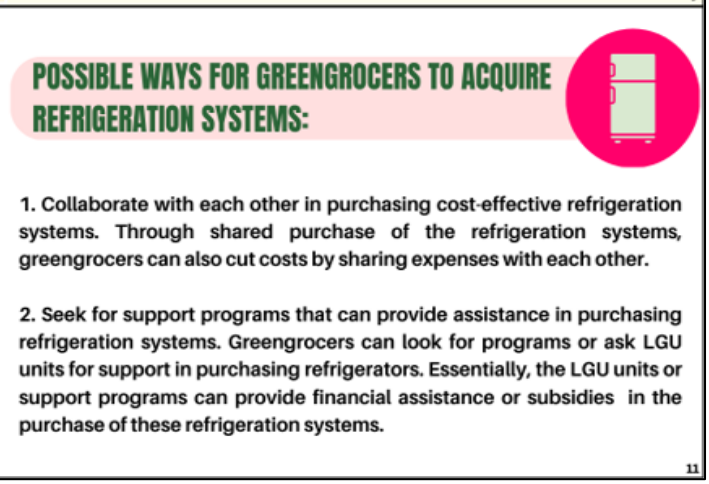

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SHELF LIFE COMPARISONS OF COMMON FRUITS AND VEGETABLES

PRODUCE	DECAY IMAGE	REFRIGERATED SHELF LIFE	NON- REFRIGERATED SHELF LIFE
BANANA		7-10 DAYS	3-5 DAYS
APPLE		1-2 MONTHS	1-2 WEEKS
LEAFY GREENS		3-4 WEEKS	1-2 DAYS
CUCUMBER		1 WEEK	3-4 DAYS
BELL PEPPER		1-2 WEEKS	3-5 DAYS

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SALES PROMOTIONAL STRATEGIES

3. Implement Loyalty Programs: To encourage repeat business, greengrocers can introduce simple loyalty programs, such as a card that offers a discount after a certain number of purchases. They can also offer coupons or discounts for future purchases when customers spend a specific amount, which incentivizes larger transactions and helps build a loyal customer base.

4. Repurpose Slightly Imperfect Produce: Instead of throwing away slightly damaged or overripe fruits and vegetables, greengrocers can sell them at a lower price in bundles for cooking or as pre-made fruit salad mixes. They can also prepare and sell pre-cut vegetable packs for dishes like soups and stir-fries. This reduces waste, appeals to budget-conscious shoppers, and generates additional income.

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PROPER OPERATIONAL SANITATION STRATEGIES

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WHAT IS PROPER OPERATIONAL SANITATION?

Proper operational sanitation means following strict cleanliness and hygiene practices in every step of handling, storing, and selling fresh produce to prevent spoilage and protect consumers' health

GOAL:

To ensure all produce is handled in a cleaning and safe environment, reducing spoilage and keeping customers healthy.

Set Realistic Profit Goals

Determine your desired profit margin and ensure that your pricing and sales target aligns and can cover all the costs incurred and your profit goals.

BENEFITS OF MANAGING AND MONITORING FINANCE

1. Helps small-scale greengrocers track their income and expenses, preventing overspending and ensuring that they have enough funds for daily operations and emergencies.
2. Small-scale greengrocers can allocate their money effectively based on different needs such as buying additional inventory, paying for rent and utilities, and upgrading their facilities.
3. Helps reduce the risk of financial disruption.
4. Allows small-scale greengrocers to set realistic goals and help them plan for growth.

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Track expenses

- Track and organize expenses into specific budget categories like:
- Fixed costs that remains constant regardless of sales volume such as rent and utilities
- Variable costs that rely on production and sales such as delivery and packaging
- Capital expense needed for equipment or facility upgrades.

Build spreadsheet

Enter the data including cash flow projection in order to anticipate periods of low income or high expenses.

Analyze and Adjust

Compare your actual sales to your budget and adjust projections and spending based on the changing market conditions, costs, and sales trends.

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Practice Proper Hand Hygiene

- **Wash hands with soap and water before and after handling produce**
- **Use gloves when necessary and change them regularly**
- **Provide hand sanitizer at every stall**
- **Avoid touching face, hair, or personal items while handling produce**
- **Display hand washing instructions near sinks or hand washing stations**

Clean and Sanitize Surface and Tools

- **Wipe down tables, knives, and containers before and after use.**
- **Use food-safe cleaning solutions.**
- **Keep cleaning supplies accessible.**
- **Disinfect high-touch surface (like door handles and scales) frequently.**

Maintain Clean Storage Areas

- **Sweep and mop storage areas daily.**
- **Keep storage bins and crate off the ground.**
- **Check for pests and remove spoiled produce promptly.**
- **Organize produce by type and date to ensure First-in, First-out (FIFO) rotation.**
- **Store cleaning chemicals separately from food items**

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SUSTAINABLE DISPOSAL STRATEGIES FOR GREENGROCERS

Value-Added Product Creation

- Convert ripe fruits into smoothies, sauces, or preserves.
- Package mixed "salvage boxes" for budget-conscious customers.
- Test small-batch kitchen products and track sales performance
- Train in basic safe food processing and labeling.

Customer Awareness & Engagement

- Educate customers through signage about "ugly produce" benefits.
- Offer discounts on nearing-expiry items.
- Launch social media content on sustainability efforts.
- Collect feedback to improve disposal-conscious shopping.

Spoilage Prevention Through Storage Optimization

- Invest in proper refrigeration and ventilation systems.
- Calibrate temperature and humidity for specific product types.
- Conduct weekly equipment checks and freshness audits.

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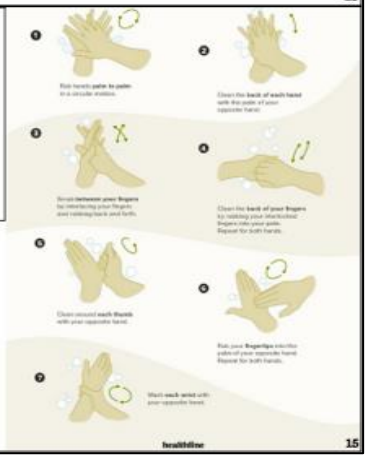
WHY OPERATIONAL SANITATION MATTERS?

- Prevents foodborne illnesses
- Reduces spoilage and waste
- Builds customer trust
- Improves product quality
- Supports community health

SANITATION QUICK TIPS:

- Wash hands often.
- Clean as you go (CLAYGO).
- Check and remove spoiled items daily.
- Keep all tools and surfaces spotless.



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APPENDICES

APPENDIX A

LETTER FOR TOTAL POPULATION STATISTICS

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April 10, 2025

THERESA G. ROBLES
Supervisor IV
Libertad Public Market
Bacolod City

Dear Ms. Robles,

Greetings!

We are third-year students from Carlos Hilado Memorial State University Fortune Towne campus taking up Bachelor of Science in Business Administration Major in Financial Management. We are taking the subject Business Research (BUSRES) and as part of our requirements in this course, we are currently conducting a research study related to the fruit and vegetable vendors in Bacolod South Public Market (Libertad Market) entitled **"Spoilage Management Practices and Financial Performance of Small-Scale Greengrocers."**

In line with this, we are respectfully requesting your assistance by providing us with the total population of fruits and vegetables vendors in Bacolod South Public Market (Libertad Market). This data is significant in determining our research population, sample size, and participants. Moreover, it is also crucial for our data gathering. We assure you that all information that you will provide will be used for academic and research purposes only and will be handled with great confidentiality. Your assistance will certainly be of great help in conducting this research as well as for the success of this study.

We are hoping for your kindness and response to us. Thank you very much and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

JOSEPH ROBERT P. JO, PhD
Research Adviser

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LETTER REQUESTING TO USE ADOPTED RESEARCH QUESTIONNAIRE

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March 7, 2025

MS. AIDA DIAZ
Research Leader
"Management Accounting Practices
and Financial Performance of Coffee Shops"

Dear Ms. Diaz,

Greetings!

In the pursuit of fulfilling a component of the Business Research (BUSRES) course curriculum, we, third-year students from the Bachelor of Science in Business Administration major in Financial Management program at Carlos Hilado Memorial State University (CHMSU) Fortune Towne Campus are currently conducting a research investigation titled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers".

In furtherance of our research, we respectfully request authorization to utilize and adopt the research questionnaire pertaining to the financial performance of coffee shops, as developed in your previous study titled "Management Accounting Practices and Financial Performance of Coffee Shops". We posit that the integration of your instrument will substantially enhance the reliability and validity of our findings. Your assistance in this matter would be invaluable in ensuring the systematic execution of our research and the acquisition of relevant, well-structured data.

We express our sincere gratitude for your consideration and anticipate a favorable response.

We extend our best wishes for your continued success.

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Approved by:
AIDA H. DIAZ
Research Leader

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March 7, 2025

MR. JOHN MICHAEL MILLENDEZ
Research Leader
"Debt Management Practices and
Financial Performance of Ambulant Vendors"

Dear Mr. Millendez,

Greetings!

In the pursuit of fulfilling a component of the Business Research (BUSRES) course curriculum, we, third-year students from the Bachelor of Science in Business Administration major in Financial Management program at Carlos Hilado Memorial State University (CHMSU) Fortune Towne Campus is currently conducting a research investigation titled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

In furtherance of our research, we respectfully request authorization to utilize and adopt the research questionnaire pertaining to the financial performance of ambulant vendors, as developed in your previous study titled "Debt Management Practices and Financial Performance of Ambulant Vendors." We posit that the integration of your instrument will substantially enhance the reliability and validity of our findings. Your assistance in this matter would be invaluable in ensuring the systematic execution of our research and the acquisition of relevant, well-structured data.

Your consideration is deeply appreciated, and we remain hopeful for a positive reply.

May your future pursuits be met with continued achievement.

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Received and Approved:

JOHN MICHAEL MILLENDEZ

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

DR. RUVY M. TUBLE
Executive Director
CHMSU, Fortune Towne
Bacolod City

Dear Dr. Tuble:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

DR. JAIME BERBANO
BSBA Chairperson
CHMSU, Fortune Towne
Bacolod City

Dear Dr. Berbano:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

MR. JETHRO B. DAGUNAN
Faculty Member
CHMSU, Fortune Towne
Bacolod City

Dear Mr. Dagunan:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

MS. JONA GABANA
Faculty Member
CHMSU, Fortune Towne
Bacolod City

Dear Ms. Gabana:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

DR. NENETTE PADILLA
Faculty Member
CHMSU, Fortune Towne
Bacolod City

Dear Dr. Padilla:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

MS. MARILOU JONOTA
Faculty Member
CHMSU, Fortune Towne
Bacolod City

Dear Ms. Jonota:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DL. LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

DR. JESSICA BARELA
Faculty Member
CHMSU, Fortune Towne
Bacolod City

Dear Dr. Barela:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

MS. JONAH J. PERULINO, MBA
BSE Chairperson
CHMSU, Fortune Towne
Bacolod City

Dear Ms. Perulino:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

MR. CHRISTIAN T. TAÑO, MBA
Faculty Member
CHMSU, Fortune Towne
Bacolod City

Dear Mr. Taño:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR VALIDATION OF THE RESEARCH INSTRUMENT

March 17, 2025

MS. MA. CHARIZ DEMAPULA
Faculty Member
CHMSU, Fortune Towne
Bacolod City

Dear Ms. Demapula:

Greetings!

We, the 3rd year college students taking up Bachelor of Science in Business Administration Major in Financial Management program in Carlo Hilado Memorial State University – Fortune Towne campus, are currently conducting a study entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers."

The group recognizes your expertise in this field; thus, we are requesting your help in validating the Spoilage Management Practices items of the attached questionnaire for the study. Attached herewith are the Informed Consent Form, Validation Form, Statement of the Problem, and the Survey Questionnaire. The questionnaire of the study will be evaluated using the Lawshe Content Validity Instrument.

Your positive response is highly appreciated. Thank you and God bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR RESEARCH QUESTIONNAIRE TRANSLATION

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DR. JOHN GERALD PILAR
Research and Development Services Office Coordinator
CHMSU Fortune Towne
Bacolod City

Dear Dr. Pilar:

We are writing to respectfully request your expertise in verifying the Hiligaynon translation of our questionnaire for our research study titled "Spoilage Management Practices and Financial Performance of Small-scale Green grocers." As 3rd-year BSBA students majoring in Financial Management at Carlos Hilado Memorial State University, we are conducting this study as part of our academic requirements.

We were given a suggestion by our panelists—Marilou Jonota, MBA, Jaime Berbano, LPT, PhD, and Nenette Padilla, PhD, about your background and experiences and we were impressed by your expertise in the field. We believe that your input would be invaluable in ensuring the accuracy and reliability of our questionnaire. Your verification of the Hiligaynon translation would greatly assist us in enhancing the quality of our research instrument.

We attached a copy of our questionnaire for your review. We would be grateful if you could provide us with your feedback and suggestions for improvement.

Thank you for considering our request. We look forward to the possibility of working with you and benefiting from your expertise.

Sincerely,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT JO
Adviser

John Gerald A. Pilar, PhD.
Research Coordinator

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LETTER FOR RELIABILITY TEST OF RESEARCH INSTRUMENT

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March __, 2025

Name of Store/Owner (Optional): _____
Nature of Product: _____
Years of business operation: _____
Capitalization: _____

Dear Sir/Ma'am:

We, the third-year Bachelor of Science in Business Administration students majoring in Financial Management at Carlos Hilado Memorial State University (CHMSU)-Fortune Towne Campus, respectfully seek permission to conduct a pilot test at your fruit or vegetable stall for our research study entitled *"Spoilage Management Practices and Financial Performance of Small-Scale Greengrocers."* This study is a requirement for our Business Research course and aims to examine the correlation between spoilage management strategies and the overall financial performance of small-scale greengrocers.

In this regard, we respectfully seek your consent to allow us to collect the necessary data to support our study. The primary objective of this pilot testing is to evaluate the consistency and reliability of our questionnaire before its official implementation in the research process.

We assure you that all information obtained will be handled with the highest level of confidentiality and will be used solely for research purposes. Furthermore, we will strictly adhere to your business's policies and regulations throughout the conduct of our study.

We sincerely appreciate your time and consideration and look forward to your favorable response. Thank you, and God Bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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LETTER FOR DATA COLLECTION PERMISSION

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Date: _____

Name of Store/Owner (Optional): _____
Nature of Product: _____
Years of business operation: _____
Capitalization: _____

Dear Sir/Ma'am:

We are third-year Bachelor of Science in Business Administration students specializing in Financial Management at Carlos Hilado Memorial State University (CHMSU)-Fortune Towne Campus. We respectfully request permission to conduct a survey at your fruit or vegetable stall as part of our research study, **"Spoilage Management Practices and Financial Performance of Small-Scale Greengrocers."** This study, required for our Business Research course, aims to explore the relationship between spoilage management strategies and the financial performance of small-scale greengrocers.

Therefore, we kindly request your permission to allow us to collect valuable insights that will provide essential data to support our study. This survey aims to analyze spoilage management practices in relation to the overall financial performance of small-scale greengrocers.

We guarantee that all collected information will be treated with the utmost confidentiality and used exclusively for research purposes. Additionally, we will fully comply with your business's policies and regulations throughout the study.

We sincerely appreciate your time and consideration and look forward to your favorable response. Thank you, and God Bless!

Respectfully yours,

JENNIFER DE LOS REYES
Research Leader

Noted by:

DR. JOSEPH ROBERT P. JO
Adviser

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APPENDIX B

SURVEY QUESTIONNAIRE

➢ *Spoilage Management Practices and Financial Performance of Small-Scale Greengrocers*

- General Instruction: Please answer the following questions based on facts. Kindly check the box that corresponds to your answer. Your honesty is appreciated.

(Palihog sabat sang tampad ang mga masunod nga pamangkutanon. Magpili sang imo sabat na yara sa kahon. Gina-apresyar gid ang imo pagkamatuod.)

- *Business Profile (Mga ginabaligya sang Negosyante)*

Nature of Product *(Mga Produkto):*

[ ] Fruits *(Prutas)*
[ ] Vegetables *(Utan)*
[ ] Fruits and Vegetables *(Prutas kag Utan)*

Amount of Capital (*Kapital sang negosyo)*: _____

Years of Business Operation *(Kalawigon sang negosyo)*: _____

- *Extent of Spoilage Management Practices*
  (Talaksan sang pamaagi kag dumala sang nagakadunot nga prutas kag utan)

✓ Direction: Please indicate the extent to which your business practices the spoilage management by checking the appropriate box. Refer to the scale below.

(Palaagihan: Magpili sang nakaigo nga sabat sa kahon parti sang inyo nga pamaagi sang nagakaladunot nga prutas kag utan.)

Numerical Scale	Verbal Interpretation	Verbal Description
4	Very Great (VG)	Practiced at all times. *(Gina praktis sa tanan nga tion.)*
3	Great (G)	Practiced most of the time. *(Gina praktis sa masami nga tion.)*
2	Low (L)	Practiced in a few instances. *(Gina praktis sang malaka.)*
1	Very Low (VL)	Practiced in very few instances. *(Gina praktis sang malaka na guid.)*

Statement				
A. Procurement *(Pagbakal)* To what extent do you practice the following procurement indicators: (*Kutob sa diin mo gina praktis ang mga nagasunod nga bagay):*	**4 (VG)**	**3 (G)**	**2 (L)**	**1 (VL)**
. Select suppliers that consistently deliver fruits or vegetables according to the agreed schedule. [1] *(Pagpili sang suplayer nga sigi-sige ang dul-ong sang mga prutas ukon utan sa gingkasugtan nga tini-on.)*				
2. Develop a forecast for fruits or vegetables to anticipate demand. [2] *(Paghimo sang estimar para sa prutas ukon utan para sa kinahanglanon sang mga manugbakal.)*				
3. Determine the quantity of fruits or vegetables to order based on sales projection. [3] *(Hibaluon ang kadamuon sang prutas ukon utan nga ibaklon base sa estimar.)*				

[1] Gheibi and Fay (2021); [2] Lestari et al. (2024); [3] Zhang et al. (2022)

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B. Transportation *(Pagbyahe)* To what extent do you practice the following transportation indicators: (*Sa diin dangat na pagpatuman sa pagbyahe sang mga produkto:)*	**4 (VG)**	**3 (G)**	**2 (L)**	**1 (VL)**
1. Maintain the cleanliness and sanitation of vehicles used for transporting goods. [1] *(Gina mintinar ang katinluon kag kalimpyuhon sang salakyan nga gina gamit sa pagdala sang mga produkto.)*				
2. Improve refrigeration systems of vehicles used for transporting goods. [2] *(Gina paayo ang sistema sang refrigeration sang salakyan nga ginagamit sa pagdala sang mga produkto.)*				
3. Plan a timely schedule of operations to avoid delay, traffic, or rush hour. [1] *(Planuhan ang ensakto nga oras sa pagdulong sang produkto agud malikawan ang trapik sa dalanon.)*				

[1] Singh et al. (2025); [2] Al-Dairi et al. (2022)

C. Storage *(Pagtago)* To what extent do you practice the following storage indicators: (*Talaksan sang pagtuman sang imbakan sang produkto):*	**4 (VG)**	**3 (G)**	**2 (L)**	**1 (VL)**
1. Store fruits or vegetables in a clean and dry storage area. [1] *(Pagpahamtang sang mga prutas ukon utanon sa malimpyo kag mala nga lugar.)*				
2. Use temperature-controlled methods such as refrigeration when necessary. [2] *(Pag-usar sang refrigerator naga kaangay sa prutas ukon utanon.)*				
3. Organize inventory using the "First In, First Out" method. [3] *(Pagplastar sang produkto base sa una nga bakal kag una baligya.)*				
4. Inspect stored fruits or vegetables to remove spoiled ones. [4] *(Pagpili kag pilak sang produkto nadunot kag indi.)*				

[1] Sharma and Sharma (2024); [2] Yenare et al. (2024); [3] Nikolicic et al. (2021); [4] Karanth et al. (2023)

D. Handling *(Pagplastar)* To what extent do you practice the following handling indicators: (*Talamdan sang pagpamalakad sang mga bagay-bagay):*	**4 (VG)**	**3 (G)**	**2 (L)**	**1 (VL)**
1. Sorting of fresh, non-fresh, and damaged fruits or vegetables. [1] *(Pagbahin-bahin sang preska, indi preska, kag madunot nga prutas ukon utanon.)*				
2. Handle fruits or vegetables carefully to avoid bruising. [1] *(Pagplastar kag pahamtang sang mga produkto na indi masamad.)*				
3. Display products properly to avoid excessive stacking or damage. [2] *(Pagplastar sang mga produkto sang mayo para maliwakan ang pagtambak kag pagkaguba.)*				
4. Use gloves or sanitized hands when handling fresh produce. [3] *(Pag gamit sang mga guwantes kag limpyo nga kamot sa pag-uyat sang mga preska nga produkto.)*				

[1] Kaur et al. (2023); [2] Karanth et al. (2023); [3] Putri and Susanna (2021)

E. Disposal *(Pagpilak)* o what extent do you practice the following disposal indicators: (*Talamdan sang pagpilak sang mga bagay-bagay):*	**4 (VG)**	**3 (G)**	**2 (L)**	**1 (VL)**
1. Repurpose spoiled fruits or vegetables as animal feed. [1] *(Ang mga dunot nga prutas kag utanon ginapakaon sa mga kasapatan.)*				
2. Convert spoiled fruits or vegetables into fertilizer. [2] *(Ginahimo abono ang mga nadunot nga produkto.)*				
Develop value-added products from slightly spoiled fruits or vegetables (i.e. jams and sauces). [3] *(Ginahimo ang mga padunot nga produkto sang iban nga pagkaon parehas sang sawsawan kag dinulse.)*				
4. Transform edible portions of slightly damaged fruits or vegetables into meal-ready ingredients (sliced ingredients for pinakbet, chopsuey, and laswa). [4] *(Ang padunot nga produkto ginatingi-tingi na pagbaligya nga panglakot sang niluto.)*				

[1] Alfie (2024); [2] Augustin et al. (2020); [3] Karanth et al. (2023); [4] Buhion et al. (2024)

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➢ *Level of Financial Performance (Pag-uswag sang Pinansiyal nga aspeto)*

- Direction: Please indicate the level of financial performance of your business with the implementation of the aforementioned spoilage management practices by checking the appropriate box. Refer to the scales below. *(Direksyon: Palihog pili kag marka sang nagakaigo nga kahon nga nagapakita sang lebel sang "financial performance" sang inyo nga negosyo.)*

- *Sales*

Numerical Scale	Verbal Interpretation	Verbal Description
4	Very High (VH)	Sales significantly and consistently increased over the past six months, with no periods of decline. *(Padayon nga pagsaka sang dako na benta sa nagligad nga anum ka bulan, nga wala tinion sang pagnubo.)*
3	High (H)	Sales increased over the past six months, with occasional periods of decline. *(Pagtaas sang benta sa nagligad nga anum ka bulan, nga may tinion sang pagnubo.)*
2	Low (L)	Sales declined over the past six months, with occasional periods of growth. *(Pagnubo sang benta sa nagligad nga anum ka bulan, nga may tinion sang pagtaas.)*
1	Very Low (VL)	Sales consistently declined over the past six months, with no signs of improvement. *(Padayon nga pagdako sang pagnubo sang benta sa nagligad nga anum ka bulan, nga wala sang palatandaan nga mag mayo.)*

Statement				
What is the level of financial performance of your business in terms of: *(Ano ang lebel sang pinansiyal nahamtangan ang imo nga negosyo batay sa mga masunod:)*				
A. Sales *(Benta)*	**4 (VH)**	**3 (H)**	**2 (L)**	**1 (VL)**
1. Gross Sales *(Kabilogan nga benta nga wala pa sang buhin.)*				
2. Net Sales *(Kabilogan nga benta nga may buhin nga discounts, mga ayo, kag mga uli.)*				

- *Cost:*

Numerical Scale	Verbal Interpretation	Verbal Description
4	Very High (VH)	Cost extremely increased over the past six months, with no periods of decrease. *(Sobra nga pagtaas sang gasto sa nagligad nga anum ka bulan, nga wala sang tinion sa pagnubo.)*
3	High (H)	Cost increased over the past six months, with occasional periods of decrease. *(Pagtaas sang gasto sa nagligad nga anum ka bulan, nga may tinion sa pagnubo.)*
2	Low (L)	Cost decreased over the past six months, with occasional periods of increase. *(Pagnubo sang gasto sa nagligad nga anum ka bulan, nga may tinion sa pagtaas.)*
1	Very Low (VL)	Cost extremely decreased over the past six months, with no periods of increase. *(Sobra nga pagnubo sang gasto sa nagligad nga anum ka bulan, nga wala sang tinion sa pagtaas.)*

Statement				
What is the level of financial performance of your business in terms of: *(Ano ang lebel sang pinansiyal nahamtangan ang imo nga negosyo batay sa mga masunod:)*				
B. Cost *(Paggasto)*	**4 (VH)**	**3 (H)**	**2 (L)**	**1 (VL)**
1. Inventory and Supplies *(Imbentaryo kag suplay sang prutas ukon utan)*				
2. Labor Cost *(Pagpasweldo sang trabahador)*				
3. Electricity and Water Expenses *(Gasto sa kuryente kag tubig)*				

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4. Transportation and Delivery Cost *(Gasto sa transportasyon sang utan ukon prutas)*				
5. Rent Expense *(Gasto sa arkila sang puwesto kag trapangko)*				

- *Profit*

Numerical Scale	**Verbal Interpretation**	**Verbal Description**
4	Very High (VH) *(Pinaka mataas)*	Profit significantly and consistently increased over the past six months, with no periods of decline. *(Padayon nga pagsaka sang dako nga ginansiya sa nagligad nga anum ka bulan, nga wala tinion sang pagnubo.)*
3	High (H) *(Mataas)*	Profit increased over the past six months, with occasional periods of decline. *(Pagtaas sang ginansiya sa nagligad nga anum ka bulan, nga may tinion sang pagnubo.)*
2	Low (L) *(Nubo)*	Profit declined over the past six months, with occasional periods of growth. *(Pagnubo sang ginansiya sa nagligad nga anum ka bulan, nga may tinion sang pagtaas.)*
1	Very Low (VL) *(Pinaka manubo)*	Profit consistently declined over the past six months, with no signs of improvement. *(Padayon nga pagdako sang pagnubo sang ginansiya sa nagligad nga anum ka bulan, nga wala sang palatandaan nga mag mayo.)*

Statement				
What is the level of financial performance of your business in terms of: *(Ano ang lebel sang pinansiyal nahamtangan ang imo nga negosyo batay sa mga masunod:)*				
C. Profit *(Ginansiya)*	**4 (VH)**	**3 (H)**	**2 (L)**	**1 (VL)**
1. Gross Profit *(Kabilogan nga ginansiya nga may buhin sang ging gasto sa bili sang utan ukon prutas.)*				
2. Net Profit *(Kabilogan nga ginansiya nga may buhin sang tanan nga ging gasto.)*				

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APPENDIX C

INFORMED CONSENT

INFORMED CONSENT

Spoilage Management Practices and Financial Performance of Small-Scale Greengrocers

This study is titled Spoilage Management Practices and Financial Performance of Small-Scale Greengrocers, partial fulfillment of the requirements for the degree of Bachelor of Science in Business Administration major in Financial Management.

Researchers

This study is to be conducted by Julius Aguilar, Jennifer De Los Reyes, Khryzyl Bray E. Dequilla, Charizza J. Eusebio, Richman Z. Flores, Larah Grace H. Garcia, Christian Andrei B. Guballa, Carlo Agustine P. Layson, Jessiryl Panganiban, and James Reniel D. Parreño, who are pursuing the Bachelor of Science in Business Administration major in Financial Management degree at Carlos Hilado Memorial State University, with Dr. Joseph Robert P. Jo as the thesis adviser. The researcher/s can be contacted through this mobile number 09608584715 or email address dequilla.khryzylbray@gmail.com.

Purpose of the Research

This study aims to address the knowledge gap that limits the ability of small-scale greengrocers to develop effective spoilage management practices that enhance financial performance. This is conducted to help the small-scale greengrocers to determine the correlation and effectiveness of spoilage management practices and the relation to its financial performance. Ultimately, the researchers aim to develop evidence-based spoilage management recommendations to help aid in minimizing losses and enhancing financial performance of the small-scale greengrocers within the locality.

Description of the Research

This study is quantitative descriptive-correlational research and the data will be gathered through a survey questionnaire within four (4) months.

Potential Benefits

This study will benefit the Small-scale greengrocers, prospective entrepreneurs and investors, suppliers, LGU officials, market administrators, academicians, researchers, and future researchers in terms of results, findings, and developed evidence-based recommendations of the study.

Confidentiality

In the conduct of the study, full confidentiality will be assured. No information that discloses your identity will be released or published without your specific consent to the disclosure and only imperatively necessary. The materials that contained the raw information derived from you will be destroyed after data processing within a given period.

Participation

Your participation in this study must be voluntary and you have the right to withdraw if you feel uncomfortable in the process of gathering information from you.

Informed Consent

Given the information above, I confirm that the potential harms, benefits, and alternatives have been explained to me. I have read and understood this consent form, and I understand that I am free to withdraw from my involvement in the study any time I deem it to be necessary or to seek clarifications for any unclear steps in the research process. I give my consent by affixing my signature.

_____

Name and Signature of the Participants

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APPENDIX D

	Validation Results														
	Question	Juror 1	Juror 2	Juror 3	Juror 4	Juror 5	Juror 6	Juror 7	Juror 8	Juror 9	Juror 10	Number of Essential	Number of Panel	CVR	Interpretation
	Extent of Spoilage Management Practices														
	Procurement														
	1	E	E	U	E	E	E	E	E	E	U	8	10	0.60	Disregard
	2	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	3	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	4	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	5	E	E	E	U	E	E	E	E	U	E	8	10	0.60	Disregard
	Transportation														
	1	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	2	E	E	E	E	E	E	E	E	U	E	9	10	0.80	Include
	3	E	E	E	E	E	E	U	E	U	E	8	10	0.60	Disregard
	4	E	E	E	U	E	E	U	E	U	E	7	10	0.40	Disregard
	5	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	Storage														
	1	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	2	E	E	E	E	E	U	E	E	E	E	9	10	0.80	Include
	3	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	4	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	5	E	E	E	E	E	E	E	U	E	U	8	10	0.60	Disregard
	Handling														
	1	E	E	E	U	E	U	E	E	E	E	8	10	0.60	Disregard
	2	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	3	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	4	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	5	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include

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	Disposal														
	1	E	E	E	E	E	E	E	E	E	U	9	10	0.80	Include
	2	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
	3	E	E	E	U	E	E	U	E	E	E	8	10	0.60	Disregard
	4	E	E	E	E	E	E	E	E	E	U	9	10	0.80	Include
	5	E	E	E	E	E	E	E	E	E	E	10	10	1.00	Include
										Overall Validity Ratio				**0.85**	

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APPENDIX E

RELIABILITY RESULTS

Extent of Spoilage Management Practices

Scale: All Variables

Case Processing Summary

	N	%
Cases Valid	30	100.0
Excluded	0	.0
Total	30	100.0

Reliability Statistics

Cronbach's Alpha	N of items
0.734	18

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APPENDIX F

SPSS OUTPUT

➢ *SOP 1*

Descriptive Statistics

	N	Mean	Std. Deviation
PROCUREMENT Q1	89	3.43	.737
PROCUREMENT Q2	89	3.57	.672
PROCUREMENT Q3	89	3.66	.563
TRANSPORTATION Q1	89	3.18	1.103
TRANSPORTATION Q2	89	1.80	1.150
TRANSPORTATION Q3	89	3.04	1.097
STORAGE Q1	89	3.74	.594
STORAGE Q2	89	1.74	1.072
STORAGE Q3	89	3.61	.763
STORAGE Q4	89	3.84	.520
HANDLING Q1	89	3.89	.411
HANDLING Q2	89	3.85	.441
HANDLING Q3	89	3.85	.466
HANDLING Q4	89	3.00	1.000
DISPOSAL Q1	89	2.58	1.214
DISPOSAL Q2	89	2.28	1.261
DISPOSAL Q3	89	1.89	1.162
DISPOSAL Q4	89	2.81	1.233
Valid N (listwise)	89		

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
MEAN AVERAGE PROCUREMENT	89	2.33	4.00	3.5543	.47125
MEAN AVERAGE TRANSPORTATION	89	1.00	4.00	2.6742	.82262
MEAN AVERAGE STORAGE	89	1.75	4.00	3.2331	.45195
MEAN AVERAGE HANDLING	89	1.75	4.00	3.6489	.41410
MEAN AVERAGE DISPOSAL	89	1.00	4.00	2.3904	.81268
MEAN AVERAGE SPOILAGE MANAGEMENT PRACTICES	89	2.06	3.83	3.0986	.37444
Valid N (listwise)	89				

MeanAverageProcurement * Nature of Products

MeanAverageProcurement			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	3.5641	65	.44847
Fruits	3.5278	24	.53763
Total	3.5543	89	.47125

MeanAverageTransportation * Nature of Products

MeanAverageTransportation			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	2.6205	65	.80768
Fruits	2.8194	24	.86242
Total	2.6742	89	.82262

MeanAverageStorage * Nature of Products

MeanAverageStorage			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	3.1769	65	.48558

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Fruits	3.3854	24	.30377
Total	3.2331	89	.45195

MeanAverageHandling * Nature of Products

MeanAverageHandling			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	3.6654	65	.41287
Fruits	3.6042	24	.42296
Total	3.6489	89	.41410

MeanAverageDisposal * Nature of Products

MeanAverageDisposal			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	2.4731	65	.82694
Fruits	2.1667	24	.74333
Total	2.3904	89	.81268

MeanAverageSMP * Nature of Products

MeanAverageSMP			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	3.1009	65	.37331
Fruits	3.0926	24	.38548
Total	3.0986	89	.37444

MeanAverageProcurement * Capitalization

MeanAverageProcurement			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	3.6014	46	.44787
Above ₱10,000	3.5039	43	.49533
Total	3.5543	89	.47125

MeanAverageTransportation * Capitalization

MeanAverageTransportation			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	2.6304	46	.80501
Above ₱10,000	2.7209	43	.84806
Total	2.6742	89	.82262

MeanAverageStorage * Capitalization

MeanAverageStorage			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	3.1902	46	.51689
Above ₱10,000	3.2791	43	.37085
Total	3.2331	89	.45195

MeanAverageHandling * Capitalization

MeanAverageHandling			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	3.7011	46	.42038
Above ₱10,000	3.5930	43	.40467
Total	3.6489	89	.41410

MeanAverageDisposal* Capitalization

MeanAverageDisposal			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	2.4783	46	.71068
Above ₱10,000	2.2965	43	.90839
Total	2.3904	89	.81268

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MeanAverageSMP* Capitalization

MeanAverageSMP			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	3.1208	46	.35279
Above ₱10,000	3.0749	43	.39913
Total	3.0986	89	.37444

MeanAverageProcurement * Years of Business Operation

MeanAverageProcurement			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	3.6304	46	.43449
Above 16 years	3.4729	43	.49991
Total	3.5543	89	.47125

MeanAverageTransportation * Years of Business Operation

MeanAverageTransportation			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	2.7609	46	.78776
Above 16 years	2.5814	43	.85787
Total	2.6742	89	.82262

MeanAverageStorage * Years of Business Operation

MeanAverageStorage			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	3.3152	46	.41645
Above 16 years	3.1453	43	.47632
Total	3.2331	89	.45195

MeanAverageHandling * Years of Business Operation

MeanAverageHandling			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	3.6848	46	.32247
Above 16 years	3.6105	43	.49492
Total	3.6489	89	.41410

MeanAverageDisposal * Years of Business Operation

MeanAverageDisposal			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	2.3152	46	.89199
Above 16 years	2.4709	43	.72006
Total	2.3904	89	.81268

MeanAverageSMP* Years of Business Operation

MeanAverageSMP			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	3.1353	46	.35711
Above 16 years	3.0594	43	.39254
Total	3.0986	89	.37444

- *SOP 2*

Descriptive Statistics

	N	Mean	Std. Deviation
SALES Q1	89	2.67	.617
SALES Q2	89	2.53	.605
COST Q1	89	2.27	.794
COST Q2	89	3.08	1.058

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COST Q3	89	2.60	1.125
COST Q4	89	2.73	1.009
COST Q5	89	2.27	1.241
PROFIT Q1	89	2.54	.565
PROFIT Q2	89	2.42	.580
Valid N (listwise)	89		

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
MEAN AVERAGE SALES	89	2.00	4.00	2.6011	.55483
MEAN AVERAGE COST	89	1.00	4.00	2.5888	.72511
MEAN AVERAGE PROFIT	89	1.50	4.00	2.4775	.53783
MEAN AVERAGE FINANCIAL PERFORMANCE	89	1.67	3.56	2.5668	.39357
Valid N (listwise)	89				

MeanAverageSales * Nature of Products

MeanAverageSales			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	2.6154	65	.54321
Fruits	2.5625	24	.59550
Total	2.6011	89	.55483

MeanAverageCost * Nature of Products

MeanAverageCost			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	2.4985	65	.74760
Fruits	2.8333	24	.60911
Total	2.5888	89	.72511

MeanAverageProfit * Nature of Products

MeanAverageProfit			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	2.4846	65	.55177
Fruits	2.4583	24	.50898
Total	2.4775	89	.53783

MeanAverageFP * Nature of Products

MeanAverageFP			
NATURE OF PRODUCT	**Mean**	**N**	**Std. Deviation**
Vegetable	2.5214	65	.42124
Fruits	2.6898	24	.27798
Total	2.5668	89	.39357

MeanAverageSales* Capitalization

MeanAverageSales			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	2.5217	46	.51593
Above ₱10,000	2.6860	43	.58781
Total	2.6011	89	.55483

MeanAverageCost* Capitalization

MeanAverageCost			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	2.6348	46	.71219
Above ₱10,000	2.5395	43	.74391
Total	2.5888	89	.72511

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MeanAverageProfit* Capitalization

MeanAverageProfit			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	2.4239	46	.55745
Above ₱10,000	2.5349	43	.51634
Total	2.4775	89	.53783

MeanAverageFP* Capitalization

MeanAverageFP			
CAPITALIZATION	**Mean**	**N**	**Std. Deviation**
₱10,000 and below	2.5628	46	.35401
Above ₱10,000	2.5711	43	.43615
Total	2.5668	89	.39357

MeanAverageSales * Years of Business Operation

MeanAverageSales			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	2.6848	46	.59028
Above 16 years	2.5116	43	.50578
Total	2.6011	89	.55483

MeanAverageCost * Years of Business Operation

MeanAverageCost			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	2.6609	46	.73135
Above 16 years	2.5116	43	.71886
Total	2.5888	89	.72511

MeanAverageProfit * Years of Business Operation

MeanAverageProfit			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	2.4674	46	.55179
Above 16 years	2.4884	43	.52879
Total	2.4775	89	.53783

MeanAverageFP * Years of Business Operation

MeanAverageFP			
YEARS OF BUSINESS OPERATION	**Mean**	**N**	**Std. Deviation**
16 years and below	2.6232	46	.44659
Above 16 years	2.5065	43	.32194
Total	2.5668	89	.39357

- *SOP 3*

Group Statistics

NATURE OF PRODUCT		**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
MeanAverageSMP	Vegetable	65	3.1009	.37331	.04630
	Fruits	24	3.0926	.38548	.07869

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
					Significance				95% Confidence Interval of the Difference
	F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper

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MeanAverage SMP	Equal variances assumed	.010	.922	.092	87	.464	.927	.00826	.08994	-.17051	.18704
	Equal variances not assumed			.090	39.965	.464	.928	.00826	.09130	-.17626	.19279

Group Statistics

CAPITALIZATION		N	Mean	Std. Deviation	Std. Error Mean
MeanAverageSMP	₱ 10,000 and below	46	3.1208	.35279	.05202
	Above ₱ 10,000	43	3.0749	.39913	.06087

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
MeanAverage SMP	Equal variances assumed	.678	.413	.575	87	.283	.567	.04584	.07973	-.11263	.20431
	Equal variances not assumed			.573	83.955	.284	.569	.04584	.08006	-.11338	.20506

Group Statistics

YEARS OF BUSINESS OPERATION		N	Mean	Std. Deviation	Std. Error Mean
MeanAverageSMP	16 years and below	46	3.1353	.35711	.05265
	Above 16 years	43	3.0594	.39254	.05986

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
MeanAverage SMP	Equal variances assumed	.365	.547	.954	87	.171	.343	.07583	.07947	-.08211	.23378
	Equal variances not assumed			.951	84.770	.172	.344	.07583	.07972	-.08268	.23435

- *SOP 4*

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
MeanAverageFP	89	2.5668	.39357	1.67	3.56
NATURE OF PRODUCT	89	1.27	.446	1	2

Ranks

	NATURE OF PRODUCT	N	Mean Rank	Sum of Ranks
MeanAverageFP	Vegetable	65	41.45	2694.50
	Fruits	24	54.60	1310.50
	Total	89		

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Test Statistics	
	MEAN AVERAGE FINANCIAL PERFORMANCE
Mann-Whitney U	549.500
Wilcoxon W	2694.500
Z	-2.142
Asymp. Sig. (2-tailed)	.032
a. Grouping Variable: NATURE OF PRODUCT	

Descriptive Statistics					
	N	**Mean**	**Std. Deviation**	**Minimum**	**Maximum**
MeanAverageFP	89	2.5668	.39357	1.67	3.56
CAPITALIZATION	89	1.48	.503	1	2

Ranks				
	CAPITALIZATION	**N**	**Mean Rank**	**Sum of Ranks**
MeanAverageFP	₱ 10,000 and below	46	44.48	2046.00
	Above ₱ 10,000	43	45.56	1959.00
	Total	89		

Test Statistics	
	MEAN AVERAGE FINANCIAL PERFORMANCE
Mann-Whitney U	965.000
Wilcoxon W	2046.000
Z	-.198
Asymp. Sig. (2-tailed)	.843
a. Grouping Variable: CAPITALIZATION	

Descriptive Statistics					
	N	**Mean**	**Std. Deviation**	**Minimum**	**Maximum**
MeanAverageFP	89	2.5668	.39357	1.67	3.56
YEARS OF BUSINESS OPERATION	89	1.48	.503	1	2

Ranks				
	YEARS OF BUSINESS OPERATION	**N**	**Mean Rank**	**Sum of Ranks**
MeanAverageFP	16 years and below	46	48.62	2236.50
	Above 16 years	43	41.13	1768.50
	Total	89		

Test Statistics	
	MEAN AVERAGE FINANCIAL PERFORMANCE
Mann-Whitney U	822.500
Wilcoxon W	1768.500
Z	-1.374
Asymp. Sig. (2-tailed)	.169
a. Grouping Variable: YEARS OF BUSINESS OPERATION	

➢ *SOP 5*

NON-PARAMETRIC TEST

Correlations				
			MEAN AVERAGE SPOILAGE MANAGEMENT PRACTICES	MEAN AVERAGE FINANCIAL PERFORMANCE
Spearman's rho	MEAN AVERAGE SPOILAGE MANAGEMENT PRACTICES	Correlation Coefficient	1.000	-.091
		Sig. (2-tailed)	.	.396
		N	89	89

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	MEAN AVERAGE FINANCIAL PERFORMANCE	Correlation Coefficient	-.091	1.000
		Sig. (2-tailed)	.396	.
		N	89	89

➢ *SOP 6*

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	YEARS OF BUSINESS OPERATION, NATURE OF PRODUCT, CAPITALIZATION[b]		Enter
a. Dependent Variable: MEAN AVERAGE FINANCIAL PERFORMANCE			
b. All requested variables entered.			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.251[a]	.063	.030	.38764
a. Predictors: (Constant), NATURE OF PRODUCT, CAPITALIZATION, YEARS OF BUSINESS OPERATION				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.858	3	.286	1.903	.135[b]
	Residual	12.773	85	.150		
	Total	13.631	88			
a. Dependent Variable: MEAN AVERAGE FINANCIAL PERFORMANCE						
b. Predictors: (Constant), NATURE OF PRODUCT, CAPITALIZATION, YEARS OF BUSINESS OPERATION						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.604	.226		11.541	<.001
	CAPITALIZATION	-.045	.086	-.058	-.526	.600
	NATURE OF PRODUCT	.178	.093	.201	1.902	.061
	YEARS OF BUSINESS OPERATION	-.132	.085	-.168	-1.544	.126
a. Dependent Variable: MEAN AVERAGE FINANCIAL PERFORMANCE						

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APPENDIX G

TRANSLATOR'S CERTIFICATION

Carlos Hilado Memorial State University

Alijis Campus • Binalbagan Campus • Fortune Towne Campus • Talisay (Main) Campus

A leading GREEN institution of higher learning in the global community by 2030

TRANSLATOR'S CERTIFICATION

July 28, 2025

This is to certify that the Information, Education, and Communication (IEC) material (mini booklet) of the paper entitled, "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers" of Aguilar, Julius, De Los Reyes, Jennifer, Dequilla, Khryzyl Bray E., Eusebio, Charizza J., Flores, Richman Z., Garcia, Larah Grace H., Guballa, Christian Andrei B., Layson, Carlo Agustine P., and Parreño, James Reniel D. for the Degree of Bachelor of Science in Business Administration Major in Financial Management was accurately translated into the *Hiligaynon* language. It must be noted that the undersigned has provided a complete and accurate translation of the (IEC) material (mini booklet) from English to *Hiligaynon*.

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GREEN CHMSU EXCELSIOR!

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APPENDIX H

STATISTICIAN'S CERTIFICATION

Carlos Hilado Memorial State University

Alijis Campus • Binalbagan Campus • Fortune Towne Campus • Talisay (Main) Campus

A leading GREEN institution of higher learning in the global community by 2030

(Good governance, Research-oriented, Extension-driven, Education for Sustainable Development, and Nation-building)

STATISTICIAN'S CERTIFICATION

Date: May 26, 2025

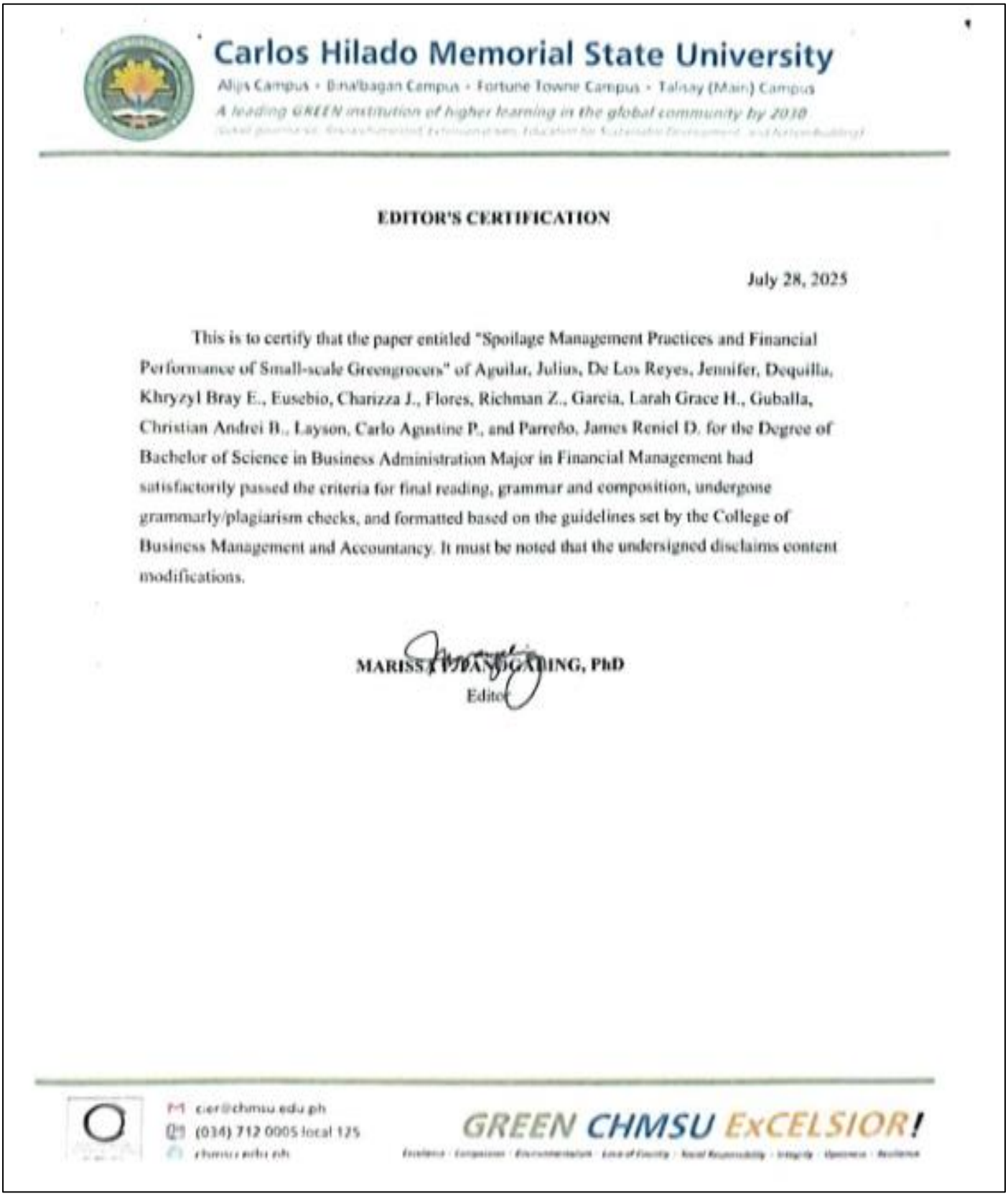
This is to certify that the analysis of the data of the paper entitled: "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers" of Aguilar, Julius, De Los Reyes, Jennifer, Dequilla, Khryzyl Bray E., Eusebio, Charizza J., Flores, Richman Z., Garcia, Larah Grace H., Guballa, Christian Andrei B., Layson, Carlo Agustine P., and Parreño, James Reniel D. for the Degree of Bachelor of Science in Business Administration Major in Financial Management was found to be correct and appropriate.

MA. ELENA S. CASAIG, PhD
Statistician

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/26apr032

APPENDIX I

EDITOR'S CERTIFICATION



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EDITOR'S CERTIFICATION

July 28, 2025

This is to certify that the paper entitled "Spoilage Management Practices and Financial Performance of Small-scale Greengrocers" of Aguilar, Julius, De Los Reyes, Jennifer, Dequilla, Khryzyl Bray E., Eusebio, Charizza J., Flores, Richman Z., Garcia, Larah Grace H., Guballa, Christian Andrei B., Layson, Carlo Agustine P., and Parreño, James Reniel D. for the Degree of Bachelor of Science in Business Administration Major in Financial Management had satisfactorily passed the criteria for final reading, grammar and composition, undergone grammarly/plagiarism checks, and formatted based on the guidelines set by the College of Business Management and Accountancy. It must be noted that the undersigned disclaims content modifications.

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